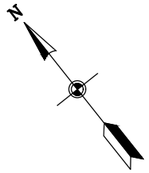
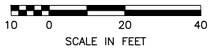
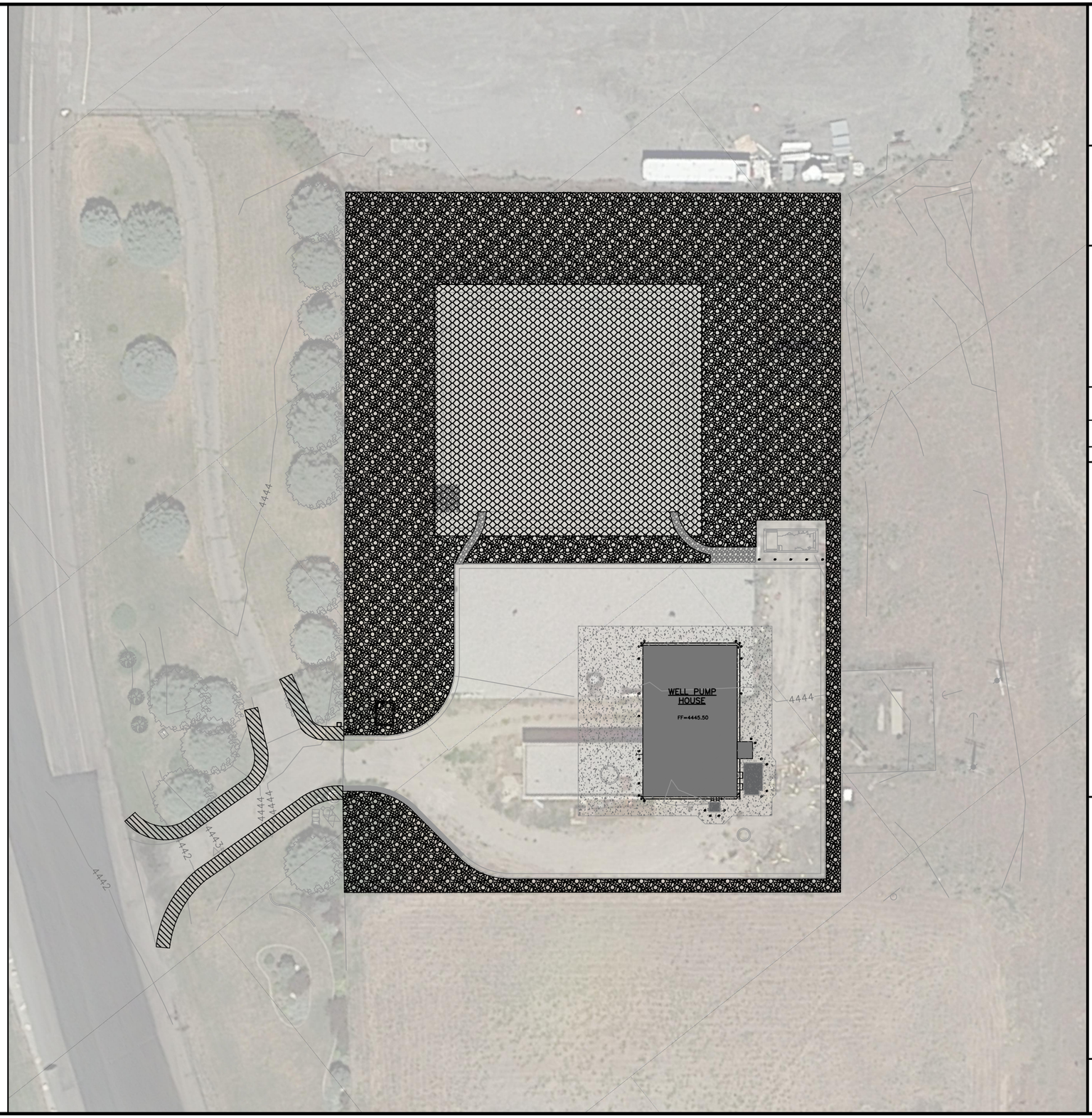




PLANT SCHEDULE				
GROUND COVERS	BOTANICAL / COMMON NAME	CONT	SPACING	QTY
	GRAVEL 2-INCH DIAMETER LANDSCAPE ROCK PLACED AT A DEPTH OF 4-INCHES OVER DEWITT PRO 5 WEED BARRIER FABRIC. ROCK TO BE PEACHES AND CREAM BY STAKER PARSONS OR APPROVED EQUAL.	NONE		20,568 SF
	GRAVEL 4-INCH DIAMETER ANGULAR ROCK PLACED AT A DEPTH OF 8-INCHES OVER DEWITT PRO 5 WEED BARRIER FABRIC. ROCK TO BE NEPHI CRUSHED BY STAKER PARSONS OR APPROVED EQUAL.	NONE		9,197 SF
	POA PRATENSIS / KENTUCKY BLUEGRASS RESTORE EXISTING TURF WITH NEW SOD. RESTORE EXISTING IRRIGATION.	SOD		1,041 SF

LANDSCAPE NOTES:

1. LANDSCAPE ROCK SAMPLES SHALL BE SUBMITTED TO THE ENGINEER, LANDSCAPE ARCHITECT, OR OWNER FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT.
2. THE LANDSCAPE PLANS ARE TO BE USED IN CONJUNCTION WITH THE GRADING, CIVIL AND ELECTRICAL/LIGHTING PLANS.
3. THE CONTRACTOR SHALL EXAMINE THE SITE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND NOTIFY THE OWNER IN WRITING OF UNSATISFACTORY CONDITIONS. DO NOT PROCEED UNTIL CONDITIONS HAVE BEEN CORRECTED.
4. BEFORE STARTING WORK, CONTRACTOR SHALL CONTACT APPROPRIATE UTILITY COMPANIES FOR EXISTING AND PROPOSED UNDERGROUND UTILITIES, IRRIGATION SLEEVES, ELECTRICAL CONDUITS, SIGNAGE, ETC. CONTRACTOR SHALL REPAIR ALL DAMAGED IMPROVEMENTS AT CONTRACTOR'S EXPENSE.
5. IN AREAS REQUIRING TRENCHING OR STAGING ACTIVITIES CONTRACTOR TO SEED DISTURBED AREA TO MATCH EXISTING. NATIVE AREAS SHALL RECEIVE HYDROSEED WITH A NATIVE SEED MIX POST CONSTRUCTION. ALL AREAS TO RECEIVE SEED SHALL BE SCARIFIED TO A DEPTH OF 4-INCHES PRIOR TO HYDROSEED. ANY DAMAGES DONE TO FENCING, ADJACENT PROPERTIES, OR EXISTING IRRIGATION SYSTEMS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. PROTECT EXISTING TREES. PLACE CONSTRUCTION FENCING AT THE DRIP LINE OF EACH TREE ADJACENT TO THE PROJECT SITE. ALL ROOTS AND BRANCHES SHALL BE PRUNED WITH A CLEAN CUT, NO TEARING OF THE ROOTS OF BRANCHES.



BOWEN COLLINS & ASSOCIATES

LANDSCAPE ARCHITECT
STATE OF UTAH
LICENSED
No. 6278822
JAMIE TSANDES

FEBRUARY 27, 2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN CITY
OGDEN, UT

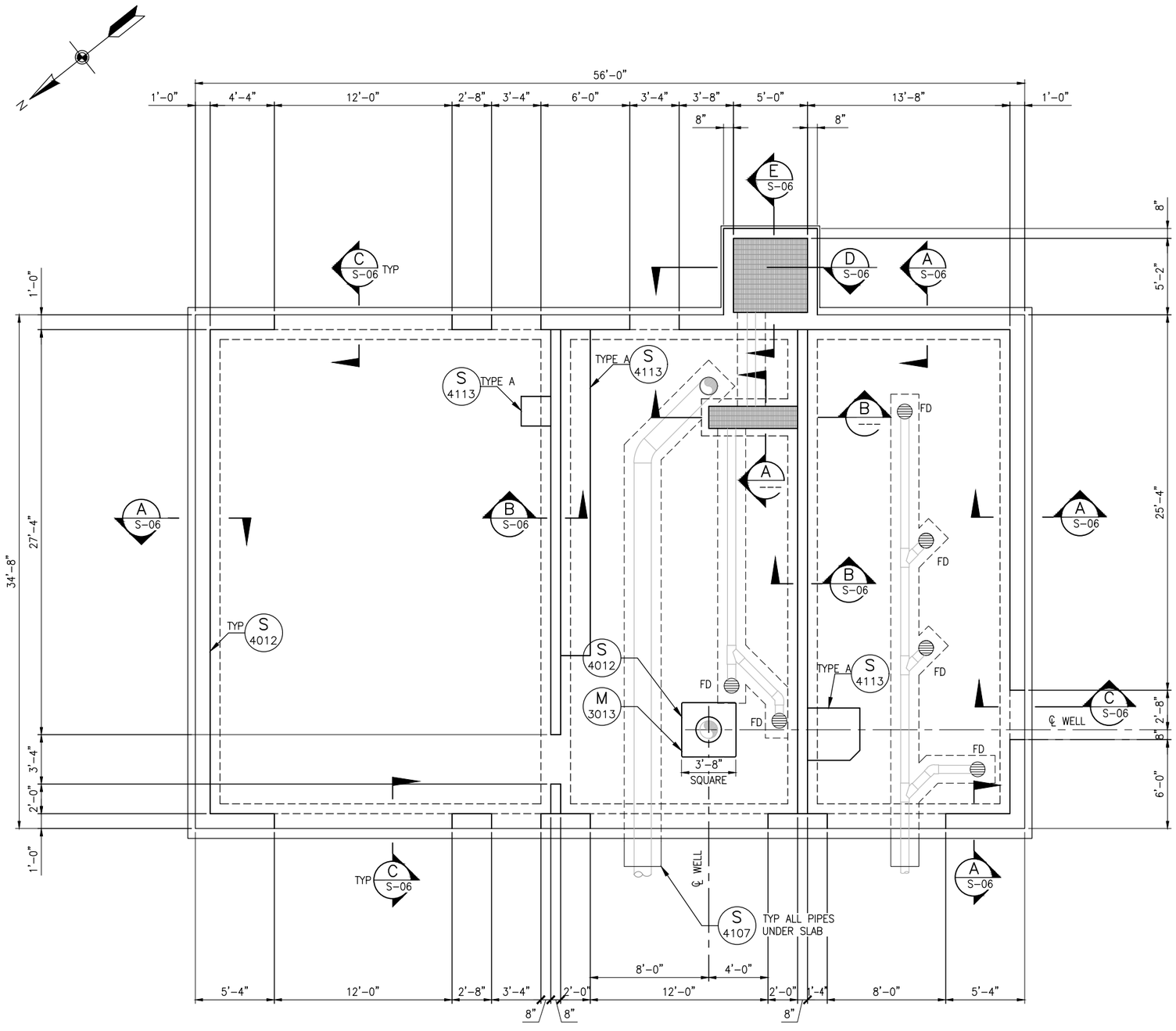
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN J.TSANDES
DRAWN J.TSANDES
REVIEW
CHECKED E.NEIL
APPROVED J.TSANDES

LANDSCAPE
LANDSCAPE PLAN

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

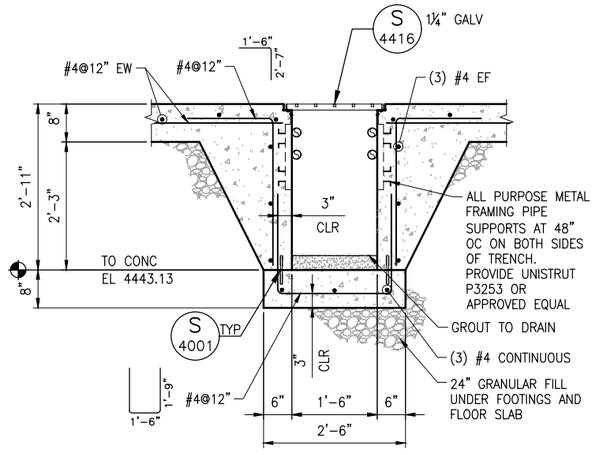
DRAWING NO.
L-01
SHEET 21 OF 58



FOUNDATION PLAN
SCALE: 1/4"=1'-0"

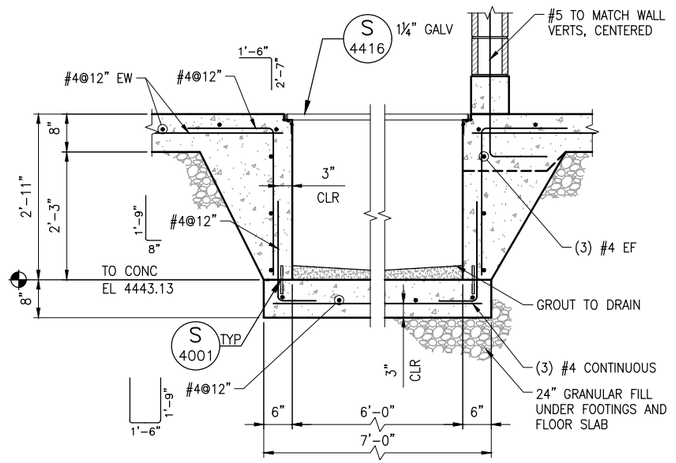
DRAWING NOTES:

1. FLOOR SLAB IS 8" CONCRETE SLAB WITH #4@12" EW IN SLAB. PLACE ON 24" GRANULAR STRUCTURAL FILL.
2. TREAT ALL FLOOR SURFACES WITH FLOOR HARDENER COMPATIBLE WITH FLOOR FINISH.
3. CHAMFER ALL EXPOSED EDGES ¾" UNLESS NOTED OTHERWISE.
4. REINFORCE AT CONCRETE WALL CORNERS AND JUNCTIONS SHALL BE PER DETAIL S/4039.
5. AT MECHANICAL PENETRATIONS THROUGH SLABS AND WALLS, ADD REINFORCING PER DETAIL S/4030.
6. CO = CLEAN OUT, FS = FLOOR SINK, FD = FLOOR DRAIN. REFER TO MECHANICAL DRAWINGS.



SECTION
SCALE: 3/4"=1'-0"

A



SECTION
SCALE: 3/4"=1'-0"

B

BOWEN COLLINS & ASSOCIATES

STEPHEN D. DAVIS — PROFESSIONAL STRUCTURAL ENGINEER — STATE OF UTAH — #176658 — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

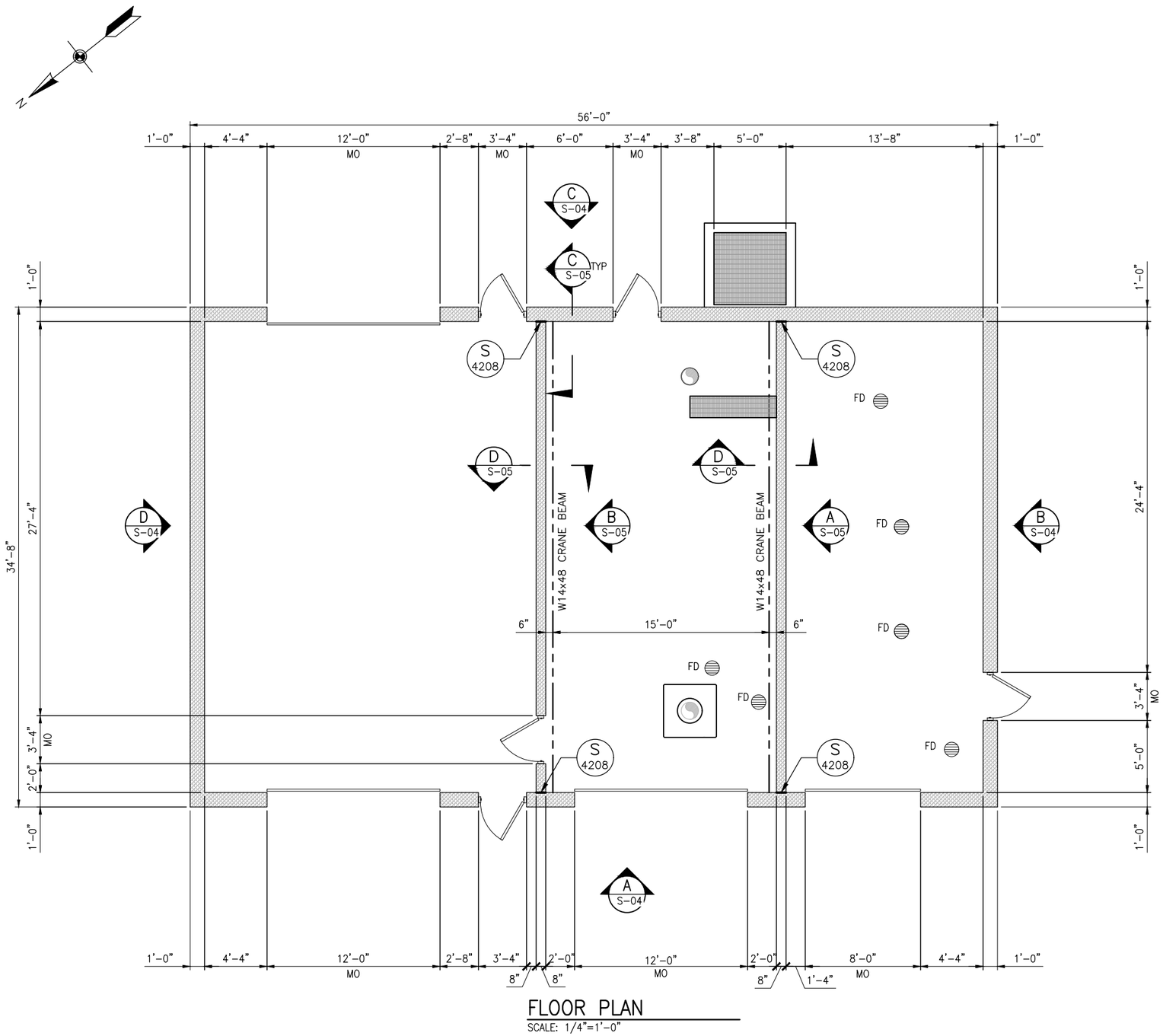
DESIGN K. SMOOT
DRAWN K. SMOOT
CHECKED R. DAVIS
APPROVED S. COHEN
REVIEW

STRUCTURAL
FOUNDATION PLAN

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

DRAWING NO. S-01
SHEET 22 OF 58

P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_S-01.dwg Plotted: 2/28/2020 3:21 PM By: Eric Neil



FLOOR PLAN

SCALE: 1/4"=1'-0"

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN — PROFESSIONAL STRUCTURAL ENGINEER — #176658 — STATE OF UTAH

2/27/2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

OGDEN CITY

OGDEN AIRPORT WELL HOUSE PROJECT

OGDEN, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN K. SMOOT

DRAWN K. SMOOT

REVIEW

CHECKED R. DAVIS

APPROVED S. COHEN

STRUCTURAL

FLOOR PLAN

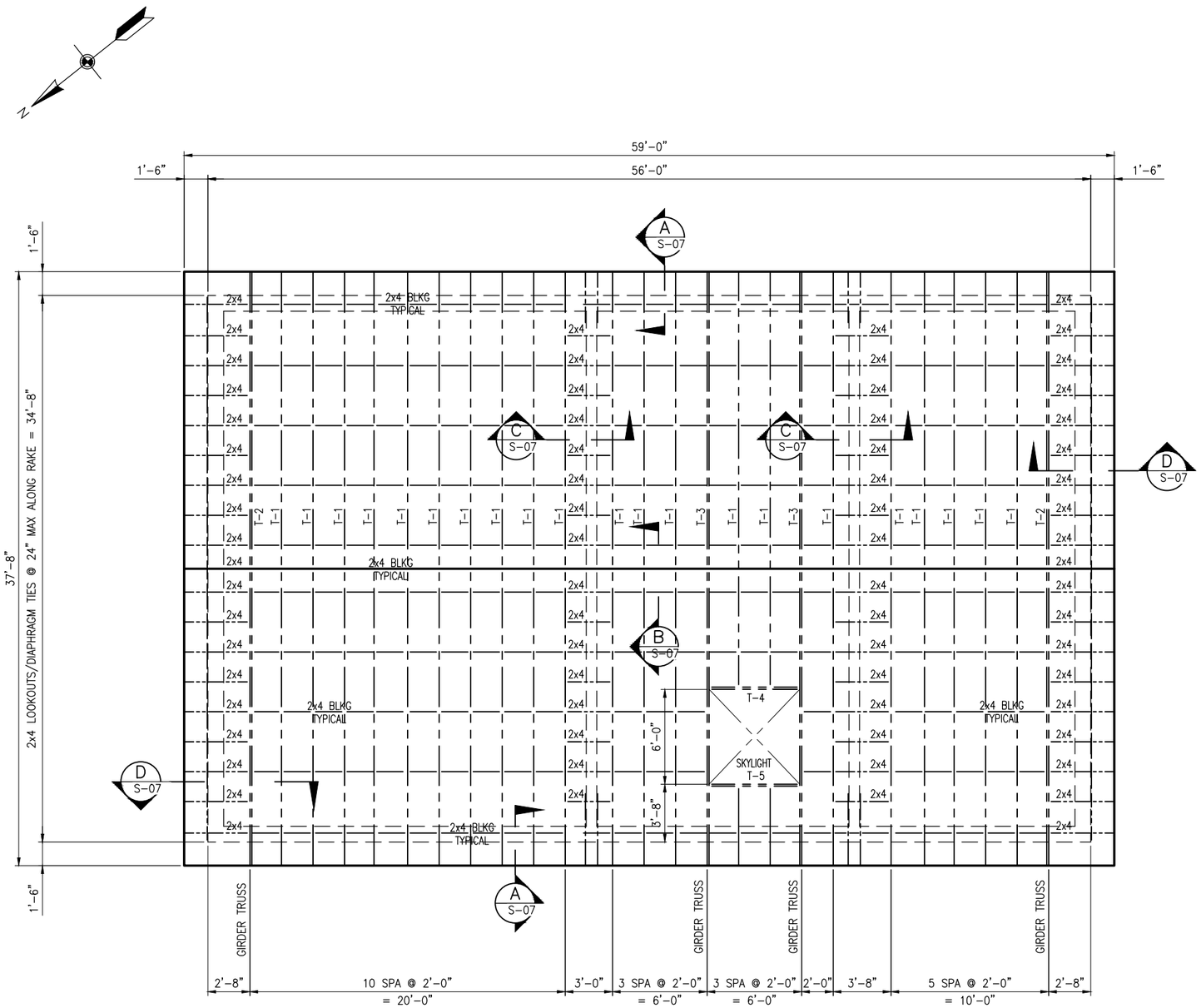
DATE: FEBRUARY 2020

PROJECT NUMBER 202-18-01

DRAWING NO. S-02

SHEET 23 OF 58

P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_S-02.dwg Plotted: 2/28/2020 3:21 PM By: Eric Neil



ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

METAL CONNECTED WOOD TRUSS NOTES

1. METAL PLATED WOOD TRUSSES SHALL BE MANUFACTURED AS SPECIFIED IN ANSI/TPI 1. MANUFACTURER OF TRUSSES USING METAL PLATE CONNECTORS SHALL RETAIN AN APPROVED AGENCY TO MAKE NONSCHEDULED INSPECTIONS OF TRUSS MANUFACTURING AND DELIVERY OPERATIONS. THE INSPECTION SHALL COVER ALL PHASES OF TRUSS OPERATIONS, INCLUDING LUMBER STORAGE, HANDLING, CUTTING FIXTURES, PRESSES OR ROLLERS, MANUFACTURING, BUNDLING AND BANDING.

2. THE TRUSS FABRICATOR SHALL BE RESPONSIBLE FOR DETERMINING THE SIZE AND GRADE OF LUMBER REQUIRED FOR EACH TRUSS MEMBER IN ACCORDANCE WITH LOADING SPECIFICATIONS GIVEN. WHERE MEMBER SIZE IS INDICATED ON THE DRAWINGS, THE FABRICATOR SHALL DETERMINE THE REQUIRED GRADE OF LUMBER. GRADES INDICATED ON DRAWINGS ARE MINIMUMS ONLY.

3. PRIOR TO FABRICATION, THE TRUSS FABRICATOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS FOR EACH TRUSS TO THE ENGINEER FOR REVIEW. CALCULATIONS SHALL INCLUDE MEMBER LOADS, FORCES AND CRITICAL STRESSES, AND MID-SPAN DEFLECTIONS. CALCULATIONS AND DRAWINGS SHALL ALSO INDICATE TYPE AND LOCATION OF BRACING REQUIRED BOTH DURING CONSTRUCTION AND PERMANENTLY. CALCULATIONS SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF UTAH.

4. TOOTHED METAL PLATES AT CONNECTOR JOINTS SHALL BE DESIGNED FOR THE FULL MEMBER DESIGN LOADS WITHOUT CONSIDERING WOOD TO WOOD BEARING. A STRESS INCREASE FOR THE VALUE OF A CONNECTOR WILL NOT BE ALLOWED IN ANY CIRCUMSTANCE. NET AREA OF METAL GUSSET PLATES SHALL BE LARGER BY 25% THAN THAT REQUIRED BY CALCULATED STRESSES. INCREASED PLATE SIZE SHALL BE MADE BY INCREASING THE PLATE DIMENSION IN EACH DIRECTION. THE AREA UNDERNEATH THE GUSSET PLATE FOR A DISTANCE OF 1/2 INCH ON EITHER SIDE OF CONNECTORS SHALL BE BALANCED ON THE JOINT AS STRESSES REQUIRE AND DIMENSIONED AS TO THEIR LOCATIONS. ONLY ONE CONNECTION PER JOINT PER SIDE WILL BE ALLOWED.

5. MINIMUM SIZE OF ANY CONNECTOR SHALL BE 15 SQ. IN. MINIMUM BITE OF ANY GUSSET PLATE ON A TRUSSED MEMBER SHALL BE 2-1/2 INCHES.

6. SPLICES IN TOP AND BOTTOM CHORDS SHALL OCCUR AT A JOINT OR WITHIN ONE-QUARTER OF THE SPAN OF A PANEL OF THE TRUSS. EACH SECTION OF THE CHORD MEMBER SHALL BE INVOLVED IN TWO JOINTS PRIOR TO BEING SPLICED.

PLAN NOTES:

1. VERIFY ALL ROUGH OPENING DIMENSIONS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.

2. THE ARRANGEMENT AND SPACING OF TEMPORARY AND PERMANENT LATERAL TRUSS BRACING SHALL BE PROVIDED BY THE TRUSS MANUFACTURER.

3. ROOF SHEATHING SHALL BE $^{19}/_{32}$" STRUCTURAL SHEATHING. NAIL ALL PERIMETER EDGES OF PANELS WITH 10d NAILS AT 6 INCHES ON CENTER MAXIMUM SPACING. NAIL PANEL TO INTERIOR SUPPORTS WITH 10d NAILS AT 6 INCHES ON CENTER. STAGGER ADJACENT PANEL EDGES.

4. LOADS:

TOP CHORD DEAD LOAD:	15 PSF
BOTTOM CHORD DEAD LOAD:	5 PSF
SNOW LOAD:	33 PSF
LIVE LOAD:	20 PSF
NET WIND UPLIFT (STRENGTH LEVEL):	12 PSF

5. "GIRDER TRUSS" DENOTES TRUSS WITH NON-TYPICAL LOADING. MAY BE DOUBLE OR SINGLE PLY TRUSS PER TRUSS MANUFACTURER.

6. AT SKYLIGHTS, 2x4 INFILL FRAMING IS REQUIRED AT BOTH TOP (ROOF) AND BOTTOM (CEILING) CHORDS OF THE TRUSSES.

BOWEN COLLINS & ASSOCIATES

STEPHEN D. DAVIS — 6176558 — STATE OF UTAH — PROFESSIONAL ENGINEER — STRUCTURAL
2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN CITY
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN K. SMOOT
DRAWN K. SMOOT
CHECKED R. DAVIS
APPROVED S. COHEN
REVIEW

STRUCTURAL

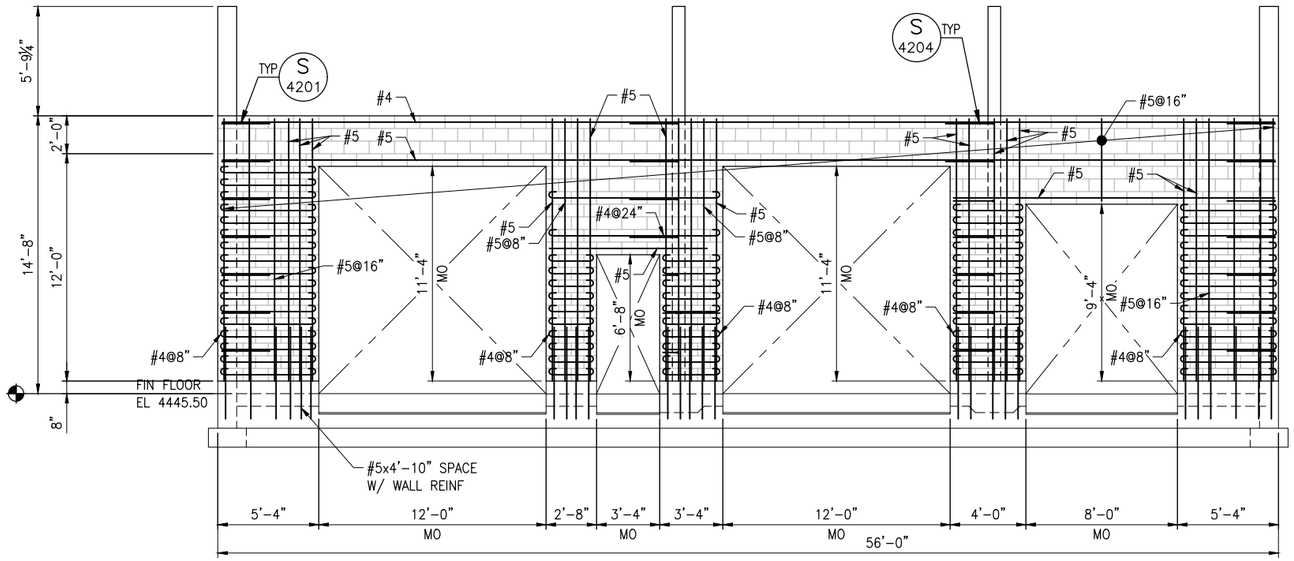
ROOF FRAMING PLAN

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
S-03

SHEET 24 OF 58

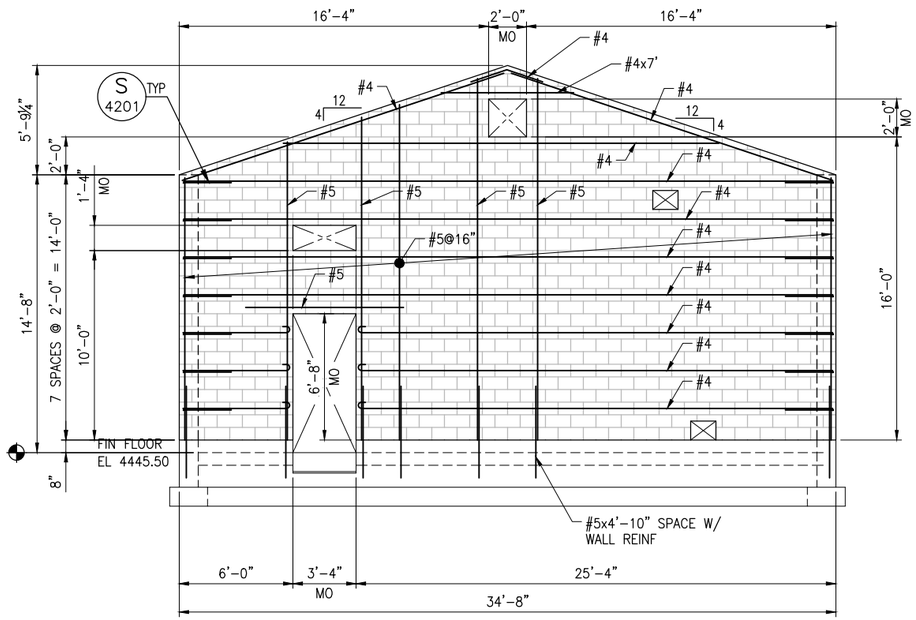
P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_S-03.dwg Plotted: 2/28/2020 3:20 PM By: Eric Neil



MASONRY ELEVATION

SCALE: 1/4"=1'-0"

A S-02



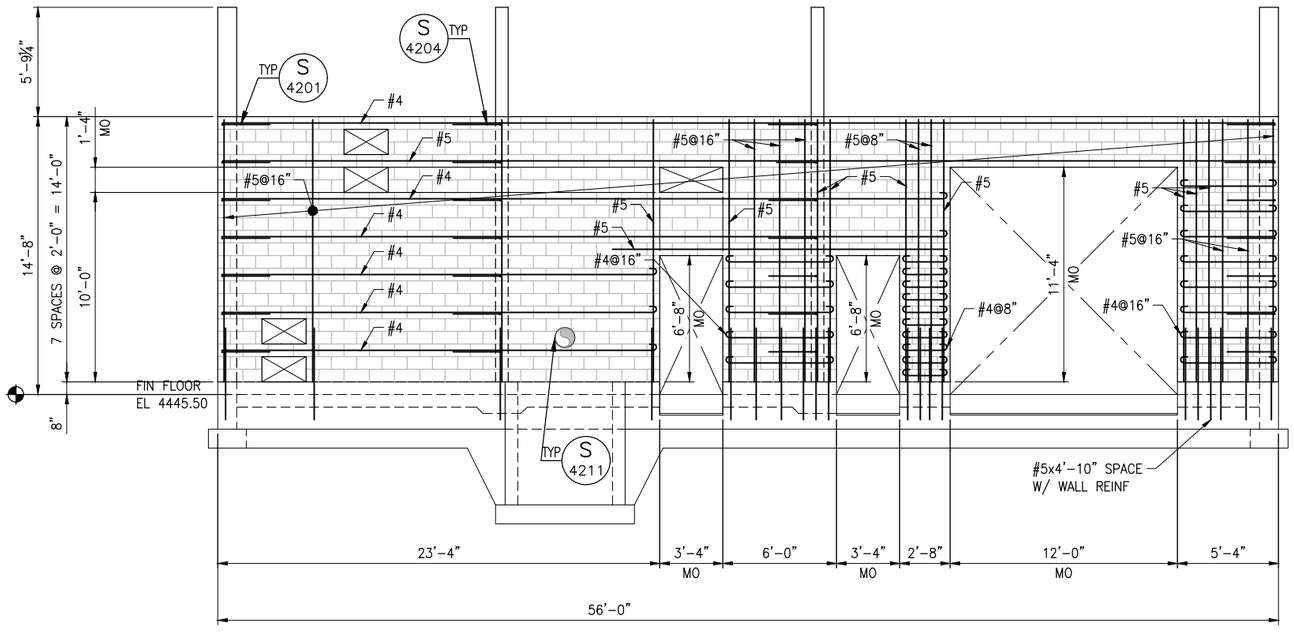
MASONRY ELEVATION

SCALE: 1/4"=1'-0"

B S-02

DRAWING NOTES:

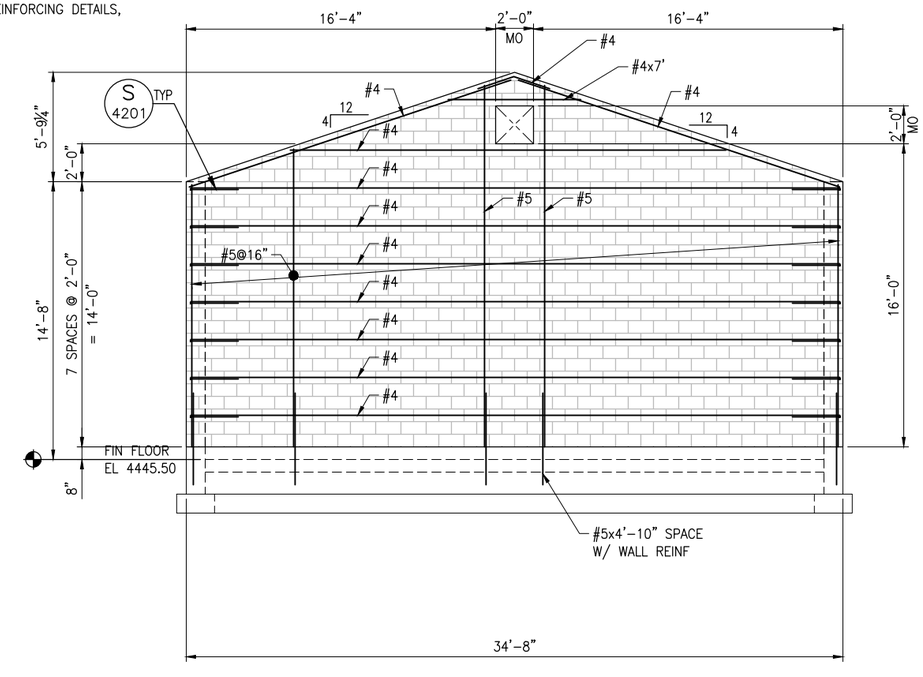
1. HORIZONTAL REINFORCING STEEL ABOVE AND BELOW OPENINGS IS TO EXTEND 2'-6" BEYOND LIMITS OF MASONRY OPENING IN FULLY GROUTED BOND BEAMS UON. USE #5 BARS IN 12" MASONRY. HOOK BARS WHERE THAT DISTANCE IS NOT AVAILABLE.
2. FOR GENERAL MASONRY NOTES, TYPICAL CORNER BOND BEAM, TYPICAL "T" BOND BEAM, AND VERTICAL WALL REINFORCING DETAILS, SEE GENERAL DETAILS SHEET GS-04.
3. VERIFY LOCATIONS AND DIMENSIONS SHOWN FOR PENETRATIONS WITH PIPING AND EQUIPMENT FURNISHED.



MASONRY ELEVATION

SCALE: 1/4"=1'-0"

C S-02



MASONRY ELEVATION

SCALE: 1/4"=1'-0"

D S-02

BOWEN COLLINS & ASSOCIATES

STEPHEN D. DAVIS — PROFESSIONAL STRUCTURAL ENGINEER — STATE OF UTAH — #176558

2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED R. DAVIS
APPROVED S. COHEN

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

STRUCTURAL

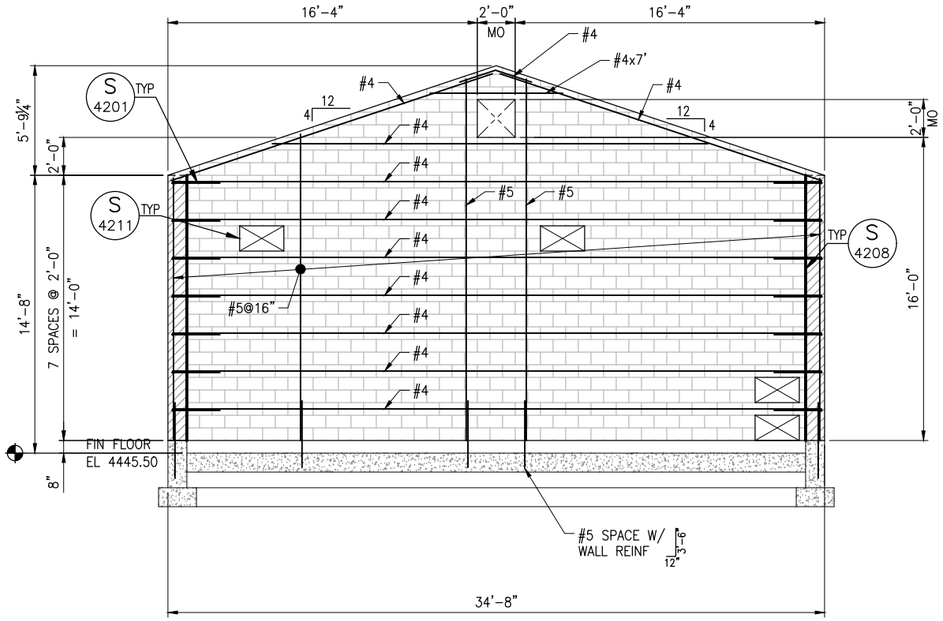
MASONRY ELEVATIONS - 1

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
S-04

SHEET 25 OF 58

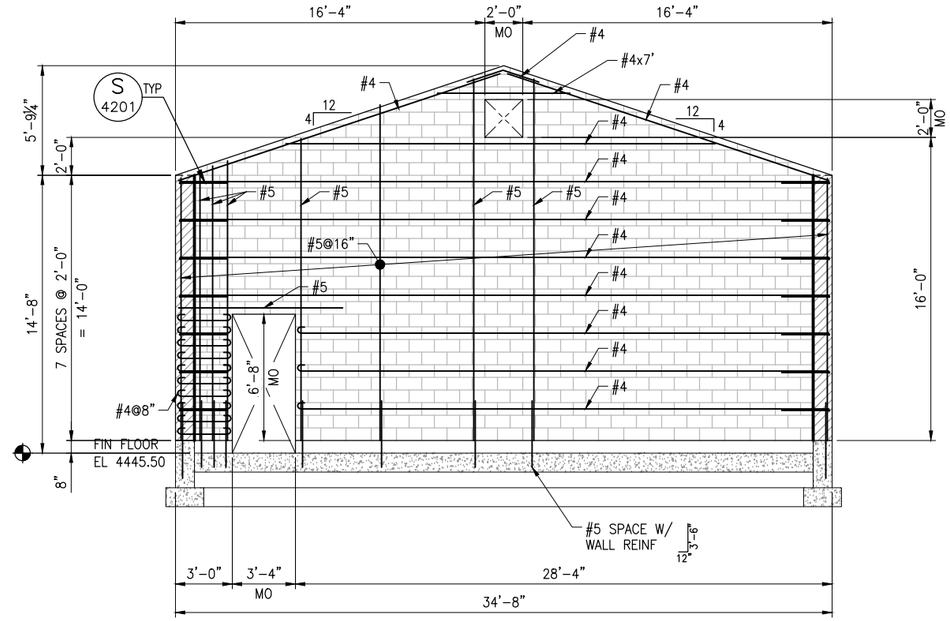
P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_S-04.dwg Plotted: 2/28/2020 3:19 PM By: Eric Neil



MASONRY ELEVATION

SCALE: 1/4"=1'-0"

A S-02



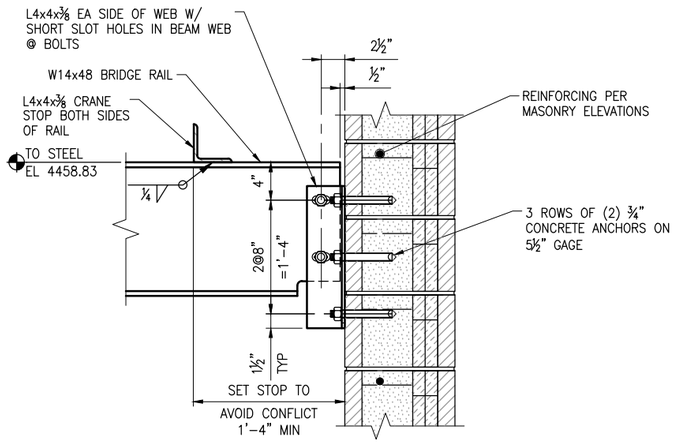
MASONRY ELEVATION

SCALE: 1/4"=1'-0"

B S-02

DRAWING NOTES:

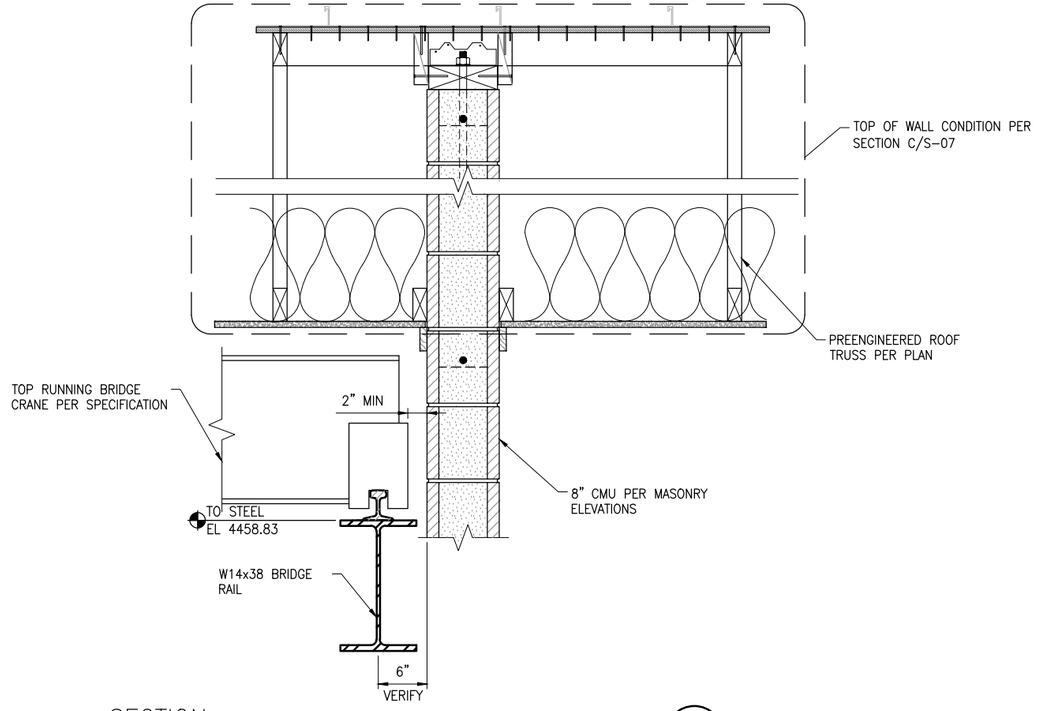
1. HORIZONTAL REINFORCING STEEL ABOVE AND BELOW OPENINGS IS TO EXTEND 2'-6" BEYOND LIMITS OF MASONRY OPENING IN FULLY GROUTED BOND BEAMS UON. USE #5 BARS IN MASONRY. HOOK BARS WHERE THAT DISTANCE IS NOT AVAILABLE.
2. FOR GENERAL MASONRY NOTES, TYPICAL CORNER BOND BEAM, TYPICAL "T" BOND BEAM, AND VERTICAL WALL REINFORCING DETAILS, SEE GENERAL DETAILS SHEET GS-04.
3. VERIFY LOCATIONS AND DIMENSIONS SHOWN FOR PENETRATIONS WITH PIPING AND EQUIPMENT FURNISHED.



SECTION

SCALE: 3/4"=1'-0"

C S-02



SECTION

SCALE: 3/4"=1'-0"

D S-02

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN — PROFESSIONAL STRUCTURAL ENGINEER — STATE OF UTAH — #176658 — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN: DESIGN K. SMOOT, DRAWN K. SMOOT
REVIEW: CHECKED R. DAVIS, APPROVED S. COHEN

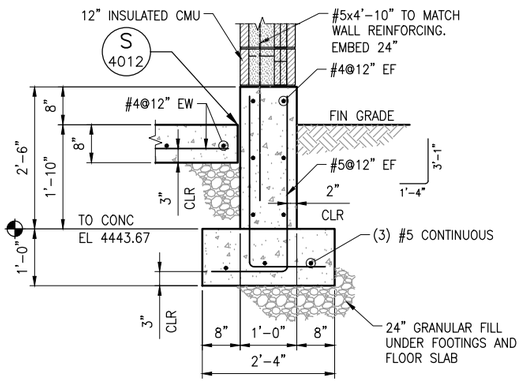
STRUCTURAL

MASONRY ELEVATIONS - 2

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

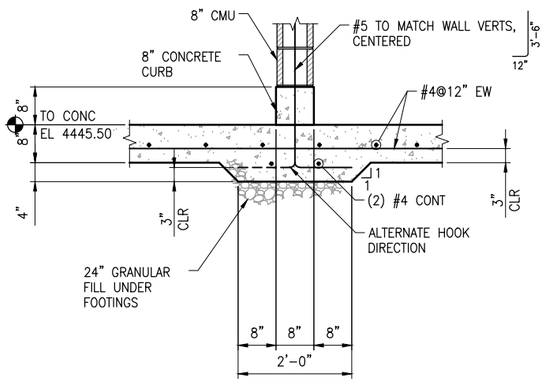
DRAWING NO. S-05

SHEET 26 OF 58



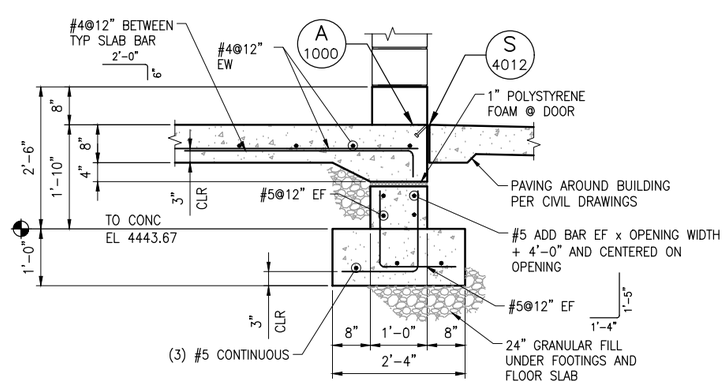
SECTION
SCALE: 3/4"=1'-0"

A
S-01



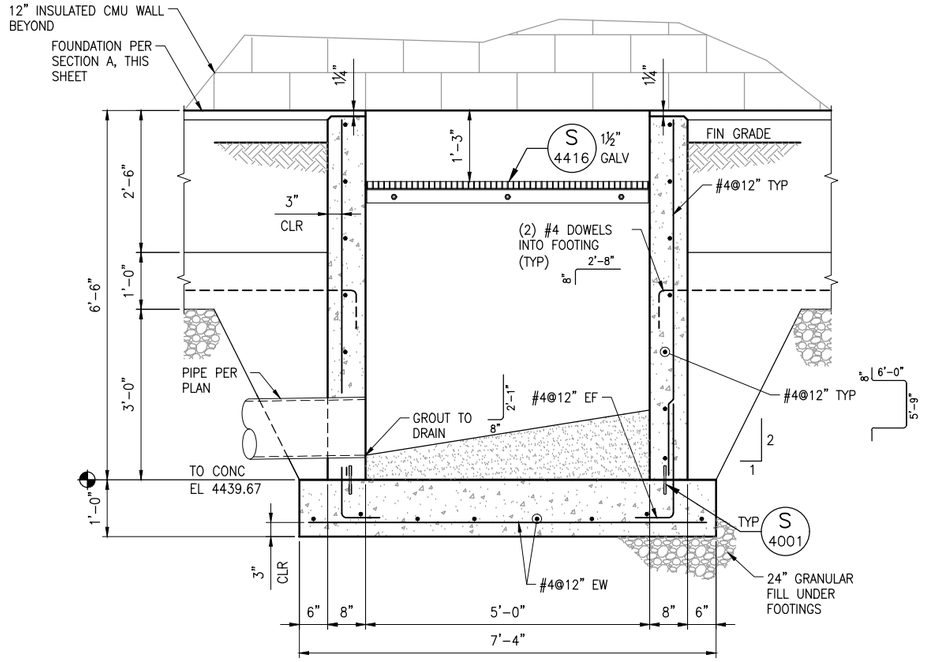
SECTION
SCALE: 3/4"=1'-0"

B
S-01



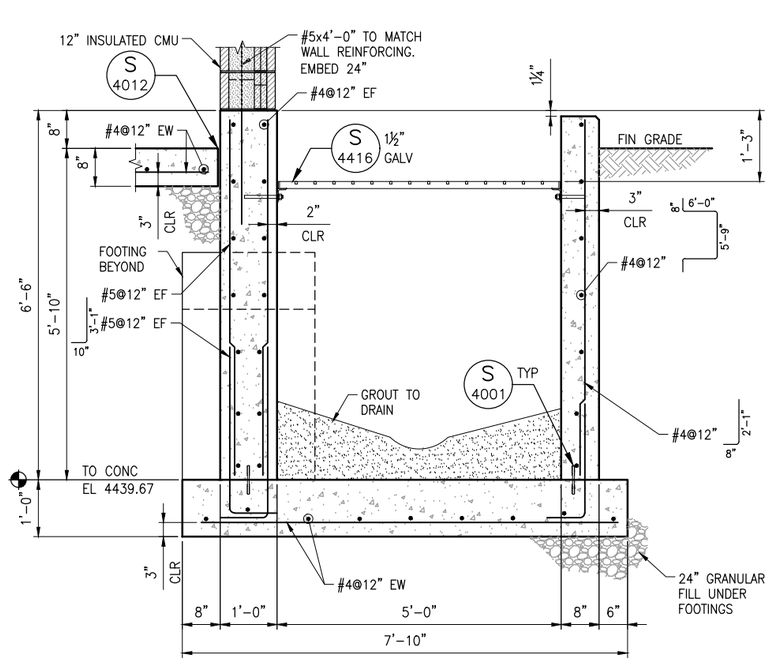
SECTION
SCALE: 3/4"=1'-0"

C
S-01



SECTION
SCALE: 3/4"=1'-0"

D
S-01



SECTION
SCALE: 3/4"=1'-0"

E
S-01

BOWEN COLLINS & ASSOCIATES

STEPHEN D. LOVELL — PROFESSIONAL STRUCTURAL ENGINEER — STATE OF UTAH — No. 176658 — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED R. DAVIS
APPROVED S. COHEN

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

STRUCTURAL

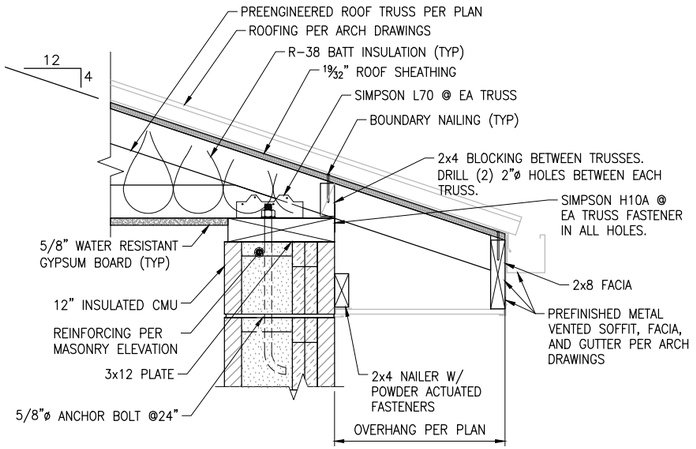
FOUNDATION DETAILS

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

DRAWING NO.
S-06

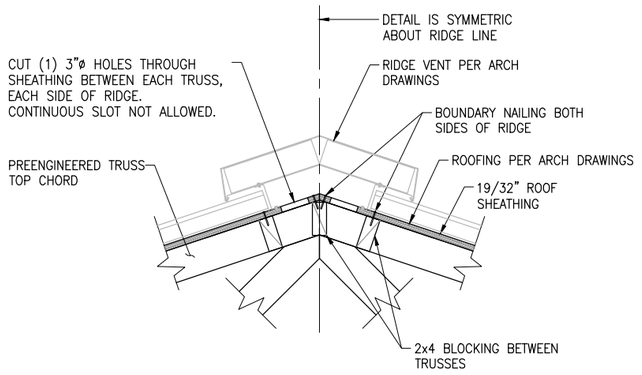
SHEET 27 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_S-06.dwg Plotted: 3/5/2020 11:59 AM By: Eric Neil



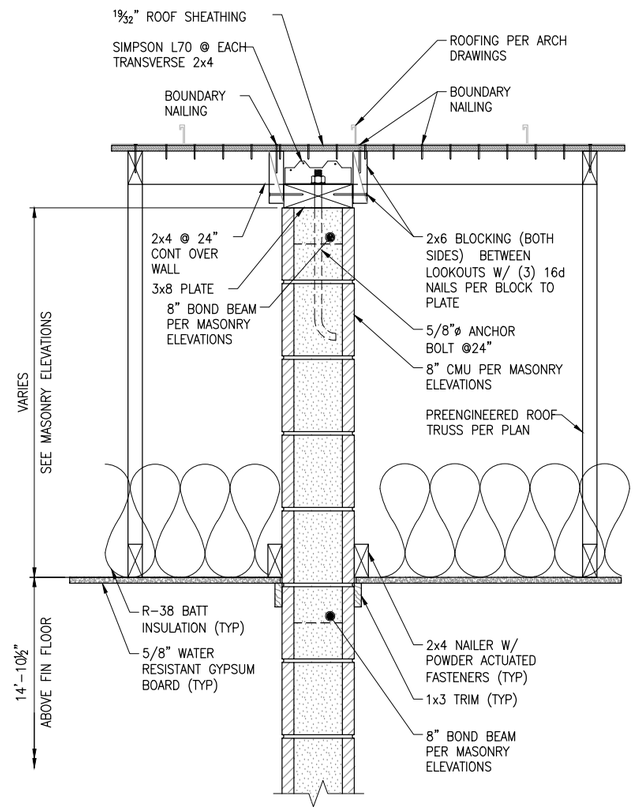
SECTION
SCALE: 1-1/2"=1'-0"

A S-03



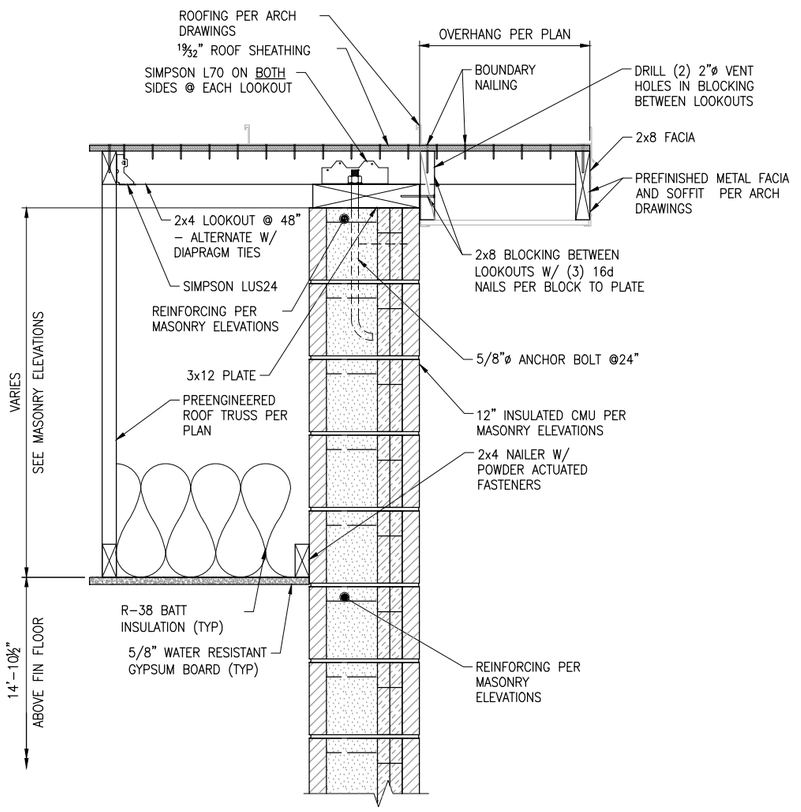
SECTION
SCALE: 1-1/2"=1'-0"

B S-03



SECTION
SCALE: 1-1/2"=1'-0"

C S-03



SECTION
SCALE: 1-1/2"=1'-0"

D S-03

DRAWING NOTES

1. CEILING SHEATHING TO BE $^{23}/_{32}$" A-C PLYWOOD SHEATHING (PAINTED). SPACE PANELS ⅛" AT EDGES AND COVER JOINTS WITH ½" x 2" BATTENS. PLACE SHEATHING TIGHT AGAINST PERIMETER WALLS.

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN — 6176558 — STRUCTURAL ENGINEER — STATE OF UTAH — PROFESSIONAL ENGINEER — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

OGDEN CITY
OGDEN AIRPORT WELL HOUSE
OGDEN, UT

REVIEW
CHECKED R. DAVIS
APPROVED S. COHEN

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

STRUCTURAL

ROOF SECTIONS

PROJECT NUMBER 202-18-01

DATE: FEBRUARY 2020

DRAWING NO.
S-07

SHEET 28 OF 58

GENERAL STRUCTURAL NOTES

GENERAL

1. THE SPECIFICATIONS AND REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL CONSTRUCTION AND INSPECTION REQUIREMENTS FOR THIS PROJECT. ADDITIONAL REQUIREMENTS ARE GIVEN IN THE PROJECT SPECIFICATIONS. IN THE EVENT OF A CONFLICT BETWEEN THESE GENERAL NOTES AND THE REQUIREMENTS GIVEN IN THE PROJECT SPECIFICATIONS, CONTACT ENGINEER TO DETERMINE WHICH PROVISION GOVERNS.
2. FOR LOCATION AND DIMENSIONS OF SLEEVES, CURBS, OPENINGS, AND DEPRESSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR SHALL VERIFY AND COORDINATE PENETRATIONS SHOWN ON THE OTHER PROJECT DRAWINGS, WHETHER THEY ARE SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.
3. EMBEDDED ITEMS, SUCH AS PIPE SLEEVES, WATERSTOPS, CONDUITS, AND INSERTS SHALL ALL BE RIGIDLY INSTALLED IN PLACE BEFORE CONCRETE IS POURED. SEE ARCHITECTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ITEMS REQUIRING SLEEVES AND EMBEDMENTS IN CONCRETE, WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
4. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
5. DESIGN DETAILS AS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND APPLY TO ALL SIMILAR SITUATIONS OCCURRING ON THE PROJECT, WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED IN EACH LOCATION. CONSULT THE ENGINEER FOR CONCURRENCE PRIOR TO CONSTRUCTION.
6. SUBMIT DRAWINGS AND RECEIVE REVIEW OF ALL STRUCTURAL RELATED SHOP DRAWINGS PRIOR TO ERECTION OR CONSTRUCTION.
7. APPLICABLE BUILDING CODE FOR THE PROJECT IS THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC) AND ASCE 7-16 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES".

SITE PREPARATION NOTES

1. SITE PREPARATION NOTES FOR THIS PROJECT ARE BASED ON RECOMMENDATIONS CONTAINED IN A SOILS REPORT BY GERHART COLE, ALONG WITH ANY ADDENDA THERETO, WHICH HAVE BEEN PREPARED FOR THIS PROJECT. FOOTINGS AND FOUNDATIONS AS SHOWN ON DRAWINGS MAY VARY IF THE SUBSURFACE SOIL CONDITIONS VARY FROM THOSE FOUND IN THE SOILS REPORT.
2. ALL PAVEMENTS, SURFACE OBSTRUCTIONS, DEBRIS, ORGANICS (INCLUDING VEGETATION), AND ANY OTHER DELETERIOUS MATERIALS INCLUDING ON-SITE UNDOCUMENTED FILL SHALL BE REMOVED FROM WITHIN THE BUILDING PAD AREA.
3. AFTER REMOVAL OF UNSUITABLE SOILS, ON-SITE NATIVE MATERIALS SHALL BE OVER-EXCAVATED BELOW FOOTINGS TO A DEPTH OF 24 INCHES BELOW THE BOTTOM OF FOOTINGS OR EXISTING GRADE, WHICHEVER EXTENDS TO A LOWER ELEVATION, AND 24 INCHES BELOW BOTTOM OF THE CONCRETE SLABS-ON-GRADE. THE WIDTH OF THE COMPACTED FILL BELOW FOOTINGS SHALL EQUAL THE WIDTH OF THE FOOTING PLUS A FOOT OF WIDTH FOR EACH FOOT OF DEPTH OF FILL.
4. AFTER REMOVAL OF THESE MATERIALS THE EXPOSED SOILS SHALL BE SCARIFIED TO 8 INCHES, MOISTURE CONDITIONED TO WITHIN 2% OF OPTIMUM MOISTURE CONDITION AND COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
5. STRUCTURAL FILL SHALL CONSIST OF WELL GRADED, PROCESSED ONSITE OR IMPORTED MATERAILS WITH A MAXIMUM SIZE OF 3 INCHES, FINES WITH BETWEEN 5-25% PASSING THE NO. 200 SIEVE, AND A PLASTICITY INDEX OF 10 OR LESS.
6. STRUCTURAL FILL BELOW FOOTINGS AND BELOW SLAB ON GRADE SHALL BE PLACED IN MAXIMUM 8 INCH LOOSE LIFTS AND COMPACTED TO AT LEAST 96% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557 AND SHALL BE CONDITIONED TO A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT.
7. SLABS ON GRADE SHALL BE UNDERLAIN BY A MINIMUM OF 24" PROPERLY PREPARED SUBGRADE AS DESCRIBED ABOVE.
8. OBTAIN APROVAL OF FOUNDATION EXCAVATION AND PLACEMENT OF STRUCTURAL FILL BY ENGINEER / SPECIAL INSPECTOR PRIOR TO PLACING CONCRETE FOUNDATIONS.

CONCRETE

1. ALL CONCRETE CONSTRUCTION TO CONFORM TO ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", INCLUDING BAR BENDS AND HOOKS UNLESS SPECIFICALLY DETAILED OTHERWISE ON THESE DRAWINGS.
2. CAST-IN-PLACE STRUCTURAL CONCRETE TO HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI. USE CEMENT CONFORMING TO ASTM C150, TYPE V, LOW ALKALI.
3. ALL CONSTRUCTION JOINTS, EXPANSION JOINTS, AND OTHER TYPES OF JOINTS, OTHER THAN THOSE SPECIFICALLY SHOWN ON THE DRAWINGS TO BE APPROVED BY THE ENGINEER PRIOR TO PLACING CONCRETE.
4. PROVIDE 3/4-INCH CHAMFER AT ALL EXPOSED EDGES AND CORNERS UNLESS NOTED OTHERWISE.
5. BEFORE PLACING THE SECOND POUR AT CONSTRUCTION JOINTS, REMOVE LAITANCE, THOROUGHLY CLEAN, AND ROUGHEN ALL JOINT SURFACES TO MINIMUM AMPLITUDE OF 1/4 INCH.

REINFORCEMENT STEEL

1. PROVIDE REINFORCEMENT STEEL CONFORMING TO ASTM A615, GRADE 60 EXCEPT WHERE WELDING IS PERMITTED BY THE ENGINEER. PROVIDE STEEL CONFORMING TO ASTM A706 WHEN WELDING IS PERMITTED.
2. WHEN CALLED FOR, PROVIDE WELDED WIRE FABRIC CONFORMING TO ASTM A105.
3. DIMENSIONS GIVEN FOR REINFORCING BARS ARE TO BAR CENTERS UNLESS NOTED OTHERWISE. BAR COVER IS THE CLEAR DISTANCE BETWEEN BAR AND CONCRETE SURFACE. CLEARANCE FOR REINFORCEMENT BARS PER THE FOLLOWING UNLESS SHOWN OTHERWISE:

   WHEN PLACED AGAINST GROUND.....3"
   INTERIOR SURFACES OF WATER-BEARING STRUCTURES.....2"
   ELEVATED SLABS.....1-1/2"
   ALL OTHER CONCRETE SURFACES.....2"
4. CONTINUE WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS. EXTEND REINFORCEMENT INTO CONNECTING WALLS AND LAP ON THE OPPOSITE FACE OF THE CONNECTING WALLS.
5. UNLESS OTHERWISE NOTED, ALL HOOKS SHOWN ARE 90° STANDARD HOOK AS DEFINED IN ACI 318.
6. LAP VERTICAL WALL BARS WITH DOWELS FROM BELOW AND EXTEND THROUGH SLABS ABOVE TO TOP FACE. BEND AND/OR LAP TO TOP SLAB REINFORCEMENT AS INDICATED.
7. UNLESS OTHERWISE INDICATED, CONTRACTOR MAY SPLICE CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS AT LOCATIONS OF HIS CHOOSING, EXCEPT THAT TOP BAR SPLICES ARE TO BE LOCATED AT MIDSPAN AND BOTTOM BAR SPLICES ARE TO BE LOCATED AT SUPPORTS. MINIMUM LAP REQUIREMENTS ARE AS FOLLOWS UNLESS OTHERWISE INDICATED.

GRADE 60 LAP LENGTHS – CONCRETE

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE DESIGN STRENGTH = 4500 PSI								
LAP LENGTH	1'-8"	2'-0"	2'-4"	3'-4"	4'-0"	4'-9"	6'-0"	7'-0"

MASONRY

1. PROVIDE CONCRETE MASONRY UNITS CONFORMING TO ASTM C90 GRADE N WITH A COMPRESSIVE STRENGTH OF 2000 PSI BASED ON THE NET SECTION FOR STANDARD CMU UNITS AND HI-R BLOCK.
2. PROVIDE MORTAR CONFORMING TO ASTM C270, TYPE S, HYDRATED. DO NOT USE MASONRY CEMENT.
3. PROVIDE GROUT CONFORMING TO ASTM C476 WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. DESIGN f'm FOR MASONRY ASSEMBLIES IS 2000 PSI FOR STANDARD CMU AND HI-R BLOCK ASSEMBLIES.
5. NUMBER AND SIZE OF FOOTING DOWELS REQUIRED TO THE CONCRETE FOUNDATION SHALL BE PER MASONRY WALL ELEVATIONS AND FOUNDATION DETAILS. CONTRACTOR MUST COORDINATE SPACING AND LOCATION OF DOWELS.
6. WHERE MASONRY ELEVATIONS INDICATE MASONRY CONTROL JOINTS (MCJ), THE BOND BEAM STEEL SHALL BE CONTINUOUS OR DISCONTINUOUS AS SHOWN ON THE ELEVATION. WHERE STEEL IS TO BE CONTINUOUS, RAKE MORTAR JOINT ON BOTH SIDES OF WALL AND APPLY SEALANT TO MATCH CONTROL JOINT DETAILS.
7. SEE ARCHITECTURAL ELEVATIONS AND DETAILS FOR LOCATION AND TYPE OF MASONRY FINISHES.
8. GROUT ALL CMU WALLS SOLID.
9. UNLESS SPECIFICALLY SHOWN ON DRAWINGS, PLACE THE MASONRY UNITS IN RUNNING BOND.
10. REINFORCEMENT SHALL HAVE A MINIMUM COVERAGE OF 1.6" FROM OUTSIDE FACE OF MASONRY. THERE SHALL BE A MINIMUM OF ½" GROUT BETWEEN REINFORCING STEEL AND MASONRY UNITS.
11. LAP REINFORCING BARS AS FOLLOWS UNLESS OTHERWISE NOTED ON THE DRAWINGS:

GRADE 60 LAP LENGTHS – MASONRY

BAR SIZE	#3	#4	#5	#6	#7	#8	#9
STANDARD CMU – CENTERED IN WALL							
LAP LENGTH	1'-0"	1'-3"	2'-0"	3'-7"	5'-0"	6'-0"	MECH
HI-R BLOCK – MINIMUM 1.6" CLEAR FROM OUTSIDE FACE OF MASONRY							
LAP LENGTH	1'-3"	2'-2"	2'-10"	4'-6"	5'-3"	MECH	MECH

MECH = MECHANICAL SPLICE REQUIRED

STRUCTURAL STEEL

1. UNLESS NOTED OTHERWISE, PROVIDE STRUCTURAL STEEL CONFORMING TO ASTM A36. ROLLED WIDE FLANGE SHAPES TO CONFORM TO ASTM A992. PIPE TO CONFORM TO ASTM A53, TYPE E OR S, GRADE B. STRUCTURAL TUBING TO CONFORM TO ASTM A1085. FABRICATE AND ERECT ALL STRUCTURAL STEEL IN CONFORMANCE WITH AISC SPECIFICATIONS.
2. PROVIDE ANCHOR BOLTS CONFORMING TO ASTM F1554, GRADE 36 EXCEPT THAT STAINLESS STEEL ANCHORS SHALL BE USED FOR ALL ATTACHMENTS WITHIN WATER BEARING STRUCTURES OR OTHER SUBMERGED AREAS.
3. USE ONLY CERTIFIED WELDERS FOR ALL WELDING WORK. USE FILLER METAL HAVING A MINIMUM TENSILE STRENGTH OF 70 KSI AND PERFORM ALL WORK IN ACCORDANCE WITH THE CURRENT STRUCTURAL WELDING CODE (AWS D1.1).
4. UNLESS OTHERWISE NOTED, COAT ALL STRUCTURAL STEEL COMPONENTS WITH PAINT OR OTHER PROTECTIVE COATINGS AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
5. MINIMUM THICKNESS FOR GUSSET PLATES IS 3/8 INCH.
6. STRUCTURAL STEEL, WHICH IS TO BE EMBEDDED INTO CONCRETE TO BE CLEAN AND FREE OF PAINT, OIL, OR DIRT.
7. PERFORM ALL WELDED OR BOLTED CONNECTIONS IN ACCORDANCE WITH THE DETAILS, SPECIFICATIONS, AND THE FIFTHTEENTH EDITION OF THE AISC HANDBOOK OF FRAMED BEAM CONNECTIONS. USE ASTM 3/4-INCH A325N BOLTS UNLESS OTHERWISE NOTED.

STAINLESS STEEL

1. WHERE REQUIRED, PROVIDE STAINLESS STEEL SHAPES, PLATES, BARS, AND RODS CONFORMING TO ASTM A666 AND A276, TYPE 316 OR 316L.

ALUMINUM

1. WHERE REQUIRED, PROVIDE ALLOY 6061-T6 FOR ALL ALUMINUM STRUCTURAL MATERIALS.
2. COAT ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS AS DETAILED IN THE SPECIFICATIONS TO PREVENT ALUMINUM-CONCRETE REACTION OR ELECTROLYTIC ACTION.
3. PERFORM ALUMINUM WELDING TO CONFORM TO THE PROVISIONS OF THE LATEST STRUCTURAL WELDING CODE (AWS D1.2)

LUMBER

1. SAWN FRAMING LUMBER SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION (WWPA) OR THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB). ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED LUMBER GRADING AGENCY. SAWN LUMBER SHALL HAVE THE FOLLOWING MINIMUM GRADE, UNLESS NOTED OTHERWISE IN CONSTRUCTION DOCUMENTS.

MEMBER	DESIGNATION
WALL STUDS	DF/L STUD OR #2
TIMBER BEAMS, JOISTS, HEADERS, AND WALL PLATES	DF/L #2 & BTR
OTHER STRUCTURAL SAWN MEMBERS NOT SPECIFIED ABOVE	DF/L CONSTRUCTION

2. LUMBER RESTING ON CONCRETE OR MASONRY SHALL BE TREATED WITH A PRESERVATIVE IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) REQUIREMENTS. FIELD TREATMENT OF END CUTS AND BORINGS IS REQUIRED ON MEMBERS OVER 2-IN THICK.
3. WOOD CONNECTORS SHOWN ON THESE DRAWINGS SHALL BE PRODUCTS OF SIMPSON STRONG-TIE, INC. UNLESS NOTED OTHERWISE. HARDWARE BY OTHER MANUFACTUERES MAY BE USED PROVIDED THEY ARE OF EQUIVALENT CAPACITY FOR THE INTENDED APPLICATION AND HAVE CURREND ICC-ES APPROVALS. SUBSTITUTIONS MUST BE APPROVED BY THE STRUCTURAL ENGINEEER. INSTALL ALL CONNECTORS WITH ALL FASTENERS REQUIRED BY THE MANUFACTURER'S SPECIFICATIONS UNLESS NOTED OTHERWISE.
4. ALL NAILS SHALL BE SINKER NAILS WITH THE FOLLOWING PROPERTIES:

NAIL SIZE	SHANK DIA	LENGTH
8d SINKER	0.113"	2 3/8"
10d SINKER	0.120"	2 7/8"
12d SINKER	0.135"	3 1/8"
16d SINKER	0.148"	3 1/4"

5. ALL STRUCTURAL WOOD PANELS SHALL BE STRUCTURAL I APA RATED SHEATHING, AND MUST CONFORM TO THE FOLLOWING NOMINAL THICKNESS AND SPAN RATING, UNLESS NOTED OTHERWISE:

THICKNESS	SPAN RATING
7/16"	24 / 16
15/32	32 / 16
19/32	40 / 20
23/32"	48 / 24

6. FULL WIDTH SHEATHING PANELS SHALL BE USED WHENEVER POSSIBLE.
7. FOR NOTES REGARDING METAL PLATED WOOD ROOF TRUSSES, SEE SHEET S-03.

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE DEFINED AS THOSE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION AND THAT ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD. FOR THIS PROJECT THE FOLLOWING ARE DEFERRED SUBMITTALS:

   A. METAL PLATED WOOD ROOF TRUSSES

LOADING CRITERIA

1. BUILDING RISK CATEGORY: IV
2. DEAD LOAD: CALCULATED FROM UNIT WEIGHT
3. LIVE LOADS:
   - SLABS ON GRADE: 100 PSF
   - ROOF: 20 PSF
4. SNOW LOAD:
   - Pg: 39 PSF
   - Ce: 1.0
   - Ct: 1.0
   - Is: 1.2
   - Pf: 33 PSF
5. WIND LOAD:
   - BASIC WIND SPEED: 114 MPH
   - EXPOSURE: C
   - K_{ZT}: 1.0
6. SEISMIC LOAD:
   - PROCEDURE: EQUIVALENT LATERAL FORCE
   - SITE CLASS: D
   - IMPORTANCE FACTOR: 1.5
   - SEISMIC DESIGN CATEGORY: D
   - SPECTRAL RESPONSE ACCELERATIONS:
     - S_S: 1.36g
     - S_1: 0.47g
   - BASIC SEISMIC-FORCE-RESISTING SYSTEM: SPECIAL REINFORCED MASONRY SHEAR WALLS R = 5, OMEGA = 2.5, C_d = 3.5
7. ALLOWABLE SOIL BEARING CAPACITY: 3,000 PSF

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION IN ACCORDANCE WITH APPROPRIATE SECTIONS OF IBC 2018, CHAPTER 17 IS REQUIRED FOR THE PROJECT.
2. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE, TO THE BUILDING OFFICIAL AND THE ENGINEER.
3. AN APPLICATION FOR OFF-SITE FABRICATION JUST BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO FABRICATION.
4. A CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION MUST BE COMPLETED AND SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO ERECTION OF PREFABRICATED COMPONENTS. SPECIAL INSPECTION REQUIRED PER IBC SECTION 1704.2.
5. SPECIAL INSPECTION ITEMS REQUIIRED AS FOLLOWS (C = CONTINUOUS, P = PERIODIC):

   CONCRETE: (TABLE 1705.3, 2018 IBC)
   - P PLACING REINFORCEMENT STEEL.
   - C WELDING REINFORCEMENT STEEL (IF APPROVED BY ENGINEER).
   - P PLACING ANCHOR BOLTS AND EMBEDDED PLATES.
   - C SAMPLING CONCRETE FOR STRENGTH TESTS.
   - P CURING TECHNIQUES AND APPLICATION.
   - C INSTALLATION OF MECHANICAL COUPLERS
   - P FORMING AND PLACING CONCRETE, SUBJECT TO EXCEPTIONS LISTED IN IBC
   - P VERIFICATION OF IN-SITU STRENGTH BEFORE REMOVING SHORING.

   MASONRY (LEVEL B): (TABLE 4, TMS 602-16/ACI 530.1-16/ASCE 6-16)
   - P VERIFICATION OF APPROVED SUBMITTAL DOCUMENTS FOR MATERIALS.
   - P CONSTRUCTION OF MORTAR JOINTS.
   - P VERIFICATION OF PROPORTIONS OF SITE-PREPARED MORTAR AND GROUT.
   - C PREPARATION OF REQUIRED MORTAR AND GROUT SPECIMENS AND PRISMS.
   - P GROUT SPACE PRIOR TO GROUTING.
   - P PLACEMENT OF GROUT.
   - P VERIFY SIZE AND LOCATION OF STRUCTURAL ELEMENTS.
   - P VERIFY TYPE, SIZE, AND LOCATION OF ANCHORS.
   - P VERIFY GRADE, SIZE, TYPE, AND LOCATION OF REINFORCEMENT.
   - C WELDING REFINFORCEMENT STEEL (IF APPROVED BY ENGINEER).
   - P VERIFY PROTECTION OF MASONRY DURING COLD AND HOT WEATHER.

   STEEL (CHAPTER N, AISC 360-16)
   - P VERIFICATION OF MATERIALS FOR HIGH-STRENGTH BOLTS, NUTS, AND WASHERS, INCLUDING IDENTIFICATION MARKINGS TO CONFIRM ASTM REQUIREMENTS SPECIFIED IN APROVED CONSTRUCTION DOCUMENTS.
   - P WELD PROCEDURE SPECIFICATIONS AVAILABLE AND USE OF QUALIFIED WELDERS.
   - P MANUFACTURERS' CERTIFIED MILL TEST REPORTS.
   - C VISUAL ACCEPTANCE OF FIELD WELDED CONNECTIONS AFTER COMPLETION.

C VISUAL ACCEPTANCE OF HIGH-STRENGTH BOLTED CONNECTIONS AFTER COMPLETION

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — STEPHEN D. COLLINS — 6176558 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN CITY
OGDEN, UT

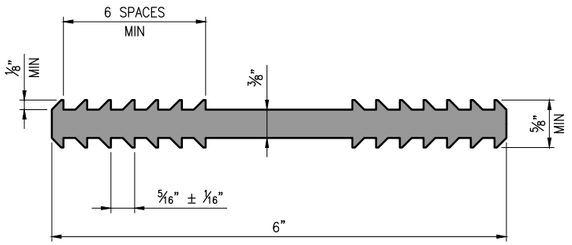
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

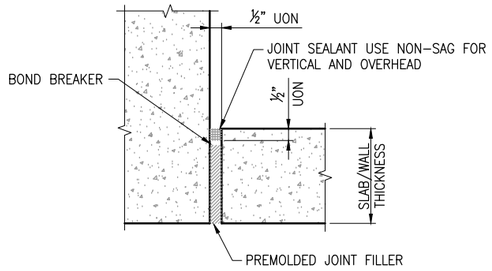
DESIGN K. SMOOT
DRAWN K. SMOOT
CHECKED R. DAVIS
APPROVED S. COHEN
REVIEW

STRUCTURAL
GENERAL STRUCTURAL NOTES
PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

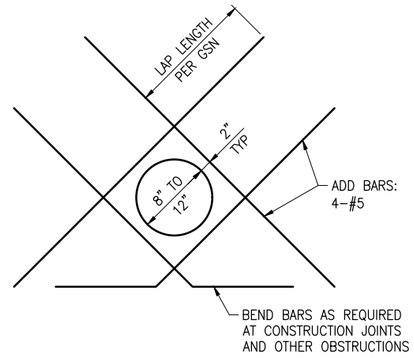
DRAWING NO. GS-01
SHEET 29 OF 58

P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_GS-01.dwg Plotted: 2/28/2020 3:15 PM By: Eric Neil





NOTE:
DISCONTINUE ALL REINFORCING AT JOINT. REINFORCING IS NOT SHOWN FOR CLARITY OF JOINT REQUIREMENTS.



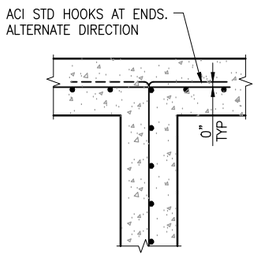
NOTES:

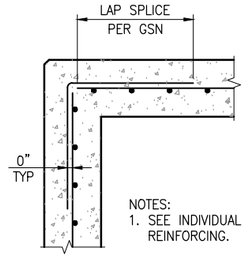
1. THIS DETAIL TO BE USED WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER DETAIL IS SPECIFIED.
2. CUT NORMAL REINFORCING 2" CLEAR OF OPENING.
3. DIAGONAL BARS TO BE PLACED:
   - AT CENTERLINE OF WALL OR SLAB WHERE SINGLE MAT OF REINFORCEMENT IS PROVIDED.
   - AT EACH FACE OF WALL OR SLAB WHERE TWO MATS OF REINFORCEMENT ARE PROVIDED.

- NO ADDITIONAL REINFORCING REQUIRED FOR OPENINGS SMALLER THAN 8".

WATERSTOP

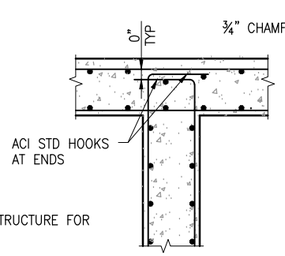
NOT TO SCALE — S 4001

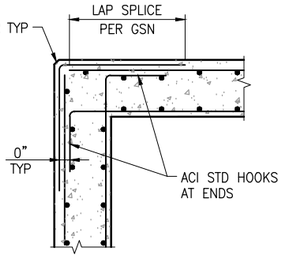




EXPANSION JOINT

NOT TO SCALE — S 4012





NOTES:

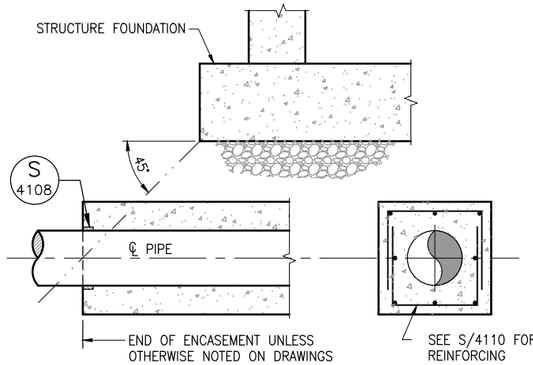
1. SEE INDIVIDUAL STRUCTURE FOR REINFORCING.
2. DETAIL IS TYPICAL AT ALL CONCRETE CORNERS AND INTERSECTIONS UNLESS SHOWN OTHERWISE.

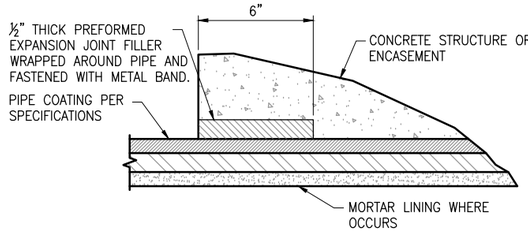
SINGLE-CURTAIN REINFORCING

DOUBLE-CURTAIN REINFORCING

DIAGONAL REINFORCEMENT AT CIRCULAR OPENINGS

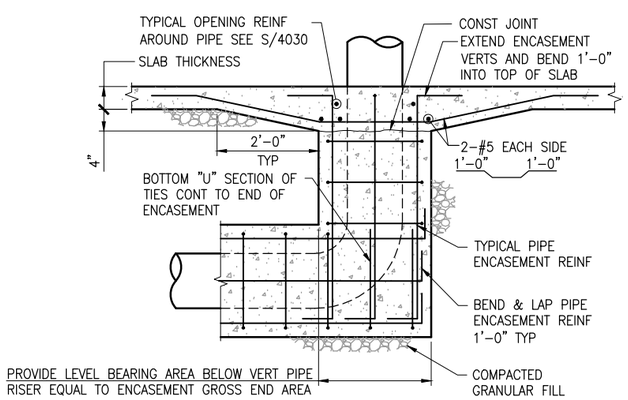
NOT TO SCALE — S 4030



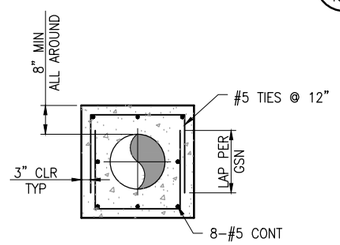


WALL REINFORCEMENT AT CORNERS AND JUNCTIONS

NOT TO SCALE — S 4039



ELEVATION



SECTION

NOTE:
SECTION APPLIES TO PIPES W/ DIAMETERS LESS THAN, OR EQUAL TO 20".

PIPE ENCASEMENT END

NOT TO SCALE — S 4107

PIPE ENCASEMENT END

NOT TO SCALE — S 4108

PIPE ENCASEMENT UNDER STRUCTURES

NOT TO SCALE — S 4110

BOWEN COLLINS & ASSOCIATES

STEPHEN D. CARROLL — STRUCTURAL ENGINEER — No. 176658 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

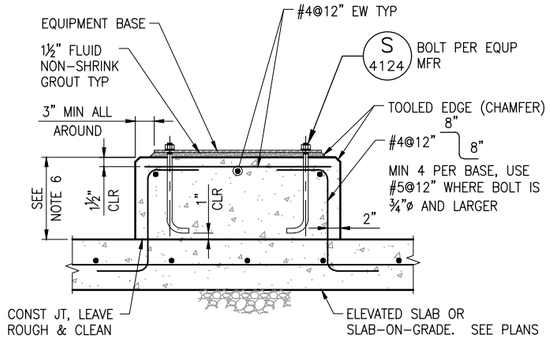
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN K. SMOOT
DRAWN K. SMOOT
CHECKED R. DAVIS
APPROVED S. COHEN
REVIEW R. DAVIS

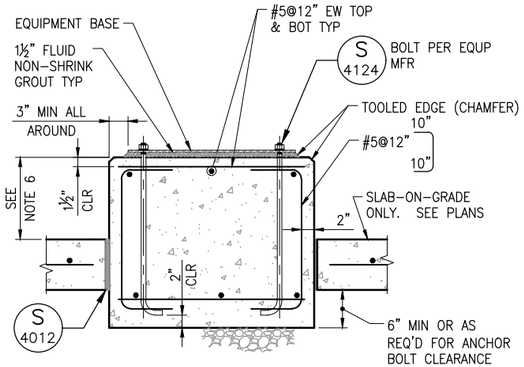
STRUCTURAL
GENERAL STRUCTURAL DETAILS - 1
DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO. GS-02
SHEET 30 OF 58

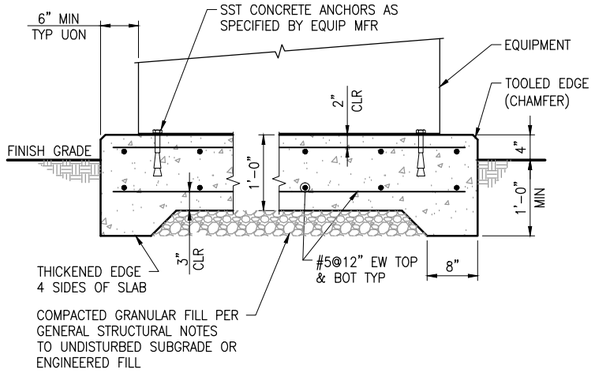
P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_GS-02.dwg Plotted: 2/28/2020 3:14 PM By: Eric Neil



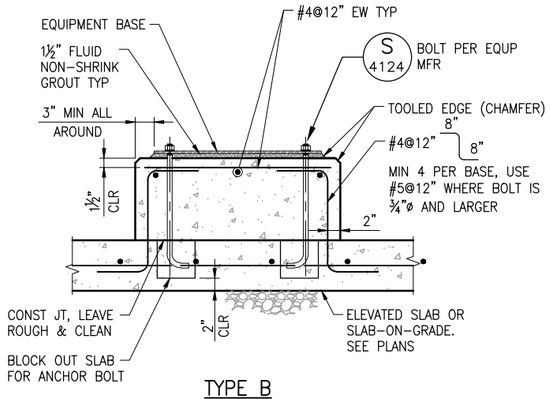
TYPE A



TYPE C

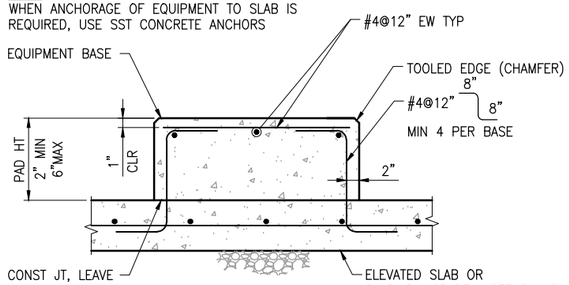


TYPE E



TYPE B

NOTE:
WHEN ANCHORAGE OF EQUIPMENT TO SLAB IS REQUIRED, USE SST CONCRETE ANCHORS



TYPE D

EQUIPMENT PAD NOTES

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE DRAWINGS. VERIFY ALL PAD SIZE REQUIREMENTS WITH EQUIPMENT SHOP DRAWINGS OF ACTUAL EQUIPMENT FURNISHED AND OBTAIN ENGINEER'S APPROVAL OF FINAL DIMENSIONS.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH TEMPLATES MATCHING THE EQUIPMENT BASE PLATE, WHILE PAD IS BEING POURED.
3. INSTALL EQUIPMENT BASES LEVEL UNLESS SPECIFIED OTHERWISE.
4. TYPE "C" DETAIL SHALL BE USED ONLY FOR SLABS ON GRADE AND AT GRADE. THE SURROUNDING FLOOR SLAB SHALL NOT BE PLACED UNTIL THE EXACT SIZE AND LOCATION OF THE EQUIPMENT PAD IS KNOWN.
5. WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN PLACE, THE WEDGES AND SHIMS SHALL NOT BE EXPOSED TO VIEW.
6. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE TO KEEP ANCHOR BOLT OUT OF SLAB (SEE TABLE BELOW). WHERE EQUIPMENT OR PIPING ELEVATIONS REQUIRE A PAD HEIGHT LESS THAN THE MINIMUM SHOWN, USE TYPE B WITH BLOCKOUT.

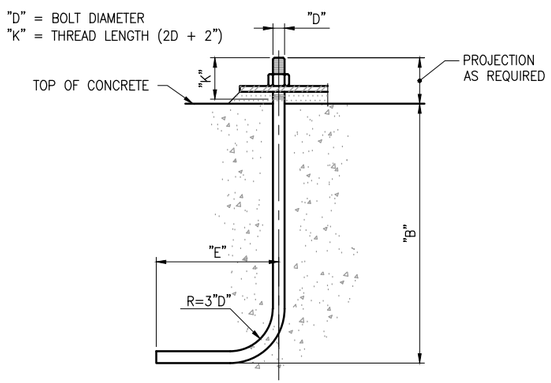
BOLT DIA (IN)	½	⅝	¾	⅞	1
MIN PAD HEIGHT	9	11	13	17	21

EQUIPMENT PAD DETAILS

NOT TO SCALE

S 4113

"D" = BOLT DIAMETER
"K" = THREAD LENGTH (2D + 2")



ANCHOR BOLT SCHEDULE			
"D"	"E"	"B"	REMARKS
⅜"	1½"	8"	
½"	1½"	10"	
⅝"	3"	12"	
¾"	3"	14"	
⅞"	4"	16"	
1"	4"	20"	

NOTES:

1. BOLTS TO CONFORM TO ASTM F1554.
2. GALVANIZE PER ASTM A153 WHEN REQUIRED ON DRAWINGS

ANCHOR BOLT (TYPE VI)

NOT TO SCALE

S 4124

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN 6476658 STRUCTURAL ENGINEER STATE OF UTAH

2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED R. DAVIS
APPROVED S. COHEN

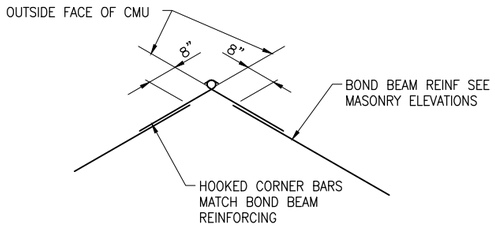
DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

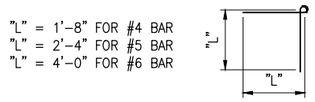
STRUCTURAL
GENERAL STRUCTURAL DETAILS - 2

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

DRAWING NO.
GS-03
SHEET 31 OF 58

P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_GS-03.dwg Plotted: 2/28/2020 3:14 PM By: Eric Neil

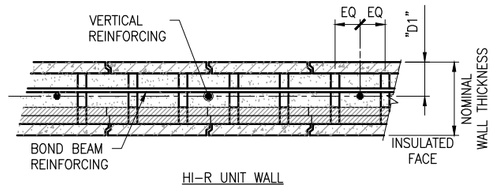




BOND BEAM CORNER DETAIL

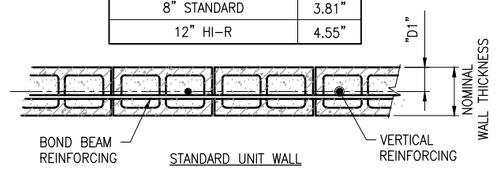
NOT TO SCALE

S 4201



HI-R UNIT WALL

VERTICAL BAR LOCATION	
NOMINAL WALL THICKNESS	"D1"
8" STANDARD	3.81"
12" HI-R	4.55"

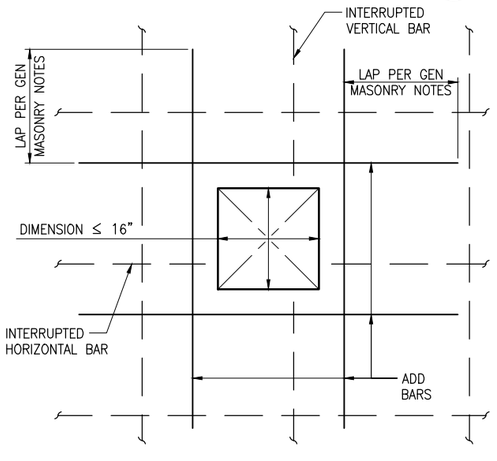


STANDARD UNIT WALL

VERT WALL STEEL LOCATION

NOT TO SCALE

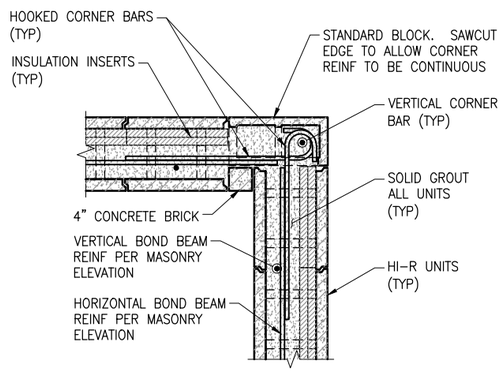
S 4205

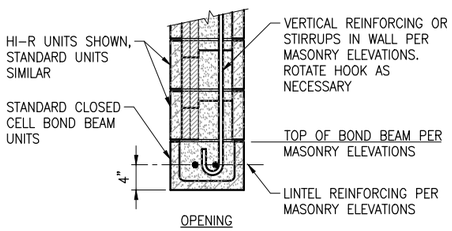


REINFORCEMENT AT MASONRY OPENING

NOT TO SCALE

S 4211





OPENING

DETAIL NOTES:

1. SEE MASONRY ELEVATIONS FOR REQUIRED LINTEL BARS. MINIMUM IS (1) #5 BAR.
2. NO LAPS ALLOWED IN LINTEL REINFORCING WITHIN 2'-0" OF EDGE OF OPENING.

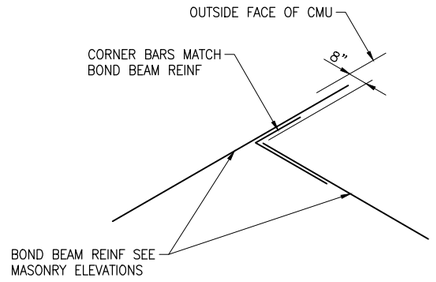
BOND BEAM SECTION

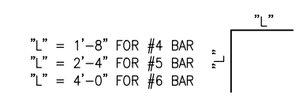
NOT TO SCALE

S 4206

DETAIL NOTES:

1. THIS DETAIL IS TO BE USED FOR OPENINGS LESS THAN 16" IN ANY DIRECTION AND WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER ADDITIONAL REINFORCING IS SPECIFIED. SEE ELEVATIONS FOR OPENINGS LARGER THAN 16".
2. ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL MATCH THE CROSS SECTIONAL AREA OF THE INTERRUPTED BAR. WHERE NO BARS ARE INTERRUPTED PROVIDE #4 MINIMUM. FIT ADD BARS WITHIN THE ADJACENT CELLS FROM THE EDGE OF THE OPENING.
3. CUT NORMAL REINFORCING 2" CLEAR OF OPENING.
4. PROVIDE STANDARD ACI HOOKS ON BARS/DOWELS IF STRAIGHT EXTENSION PAST THE OPENING CANNOT BE ACHIEVED.
5. PLACE ADD BARS IN SAME PLANES AS NORMAL REINFORCING INDICATED.

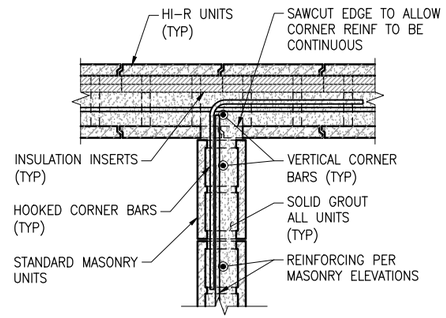


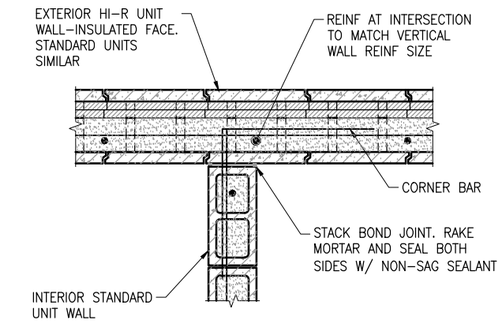


BOND BEAM INTERSECTION DETAIL

NOT TO SCALE

S 4204

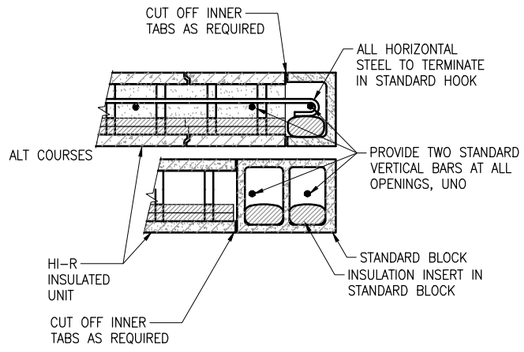




MASONRY CONTROL JOINT

NOT TO SCALE

S 4208



DOOR OR WINDOW JAMBS

NOT TO SCALE

S 4219

GENERAL MASONRY NOTES

1. THE NUMBER AND SIZE OF FOOTING DOWELS REQUIRED TO THE FOUNDATION SHALL BE PER MASONRY WALL ELEVATIONS AND FOUNDATION DETAILS.
2. WHERE MASONRY ELEVATIONS INDICATE MASONRY CONTROL JOINTS (MCJ), THE BOND BEAM STEEL SHALL BE CONTINUOUS OR DISCONTINUOUS AS SHOWN ON THE ELEVATION. WHERE STEEL IS TO BE CONTINUOUS, RAKE MORTAR JOINT ON BOTH SIDES OF WALL AND APPLY SEALANT TO MATCH CONTROL JOINT DETAILS.
3. FOR LOCATIONS OF PIPE SLEEVES, CINDUITS, AND OTHER MECHANICAL AND ELECTRICAL PENETRATIONS, REFER TO PERTINENT UTILITY DRAWINGS.
4. SEE ARCHITECTURAL ELEVATIONS AND DETAILS FOR LOCATION OF MASONRY FINISH(S).
5. ALL BLOCK SIZES (NOMINAL) ARE INDICATED ON THE FOUNDATION PLAN.
6. SPECIAL INSPECTION PER APPROPRIATE SECTIONS OF THE 2018 INTERNATIONAL BUILDING CODE ARE REQUIRED.
7. ALL WALLS ON THIS PROJECT ARE TO BE SOLID GROUTED REGARDLESS OF WHETHER GROUT IS SHOWN ON GENERAL DETAILS OR NOT.

BOWEN COLLINS & ASSOCIATES

STEPHEN D. CALDWELL — LICENSED PROFESSIONAL STRUCTURAL ENGINEER — No. 176658 — STATE OF UTAH

2/27/2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED R. DAVIS APPROVED S. COHEN

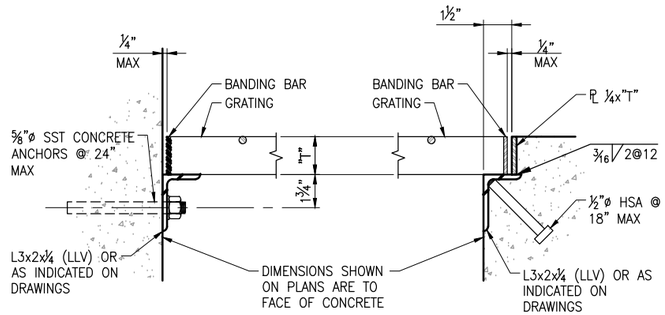
DESIGN DESIGN K. SMOOT DRAWN K. SMOOT

STRUCTURAL
GENERAL STRUCTURAL DETAILS - 3

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

DRAWING NO. GS-04
SHEET 32 OF 58

P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_GS-04.dwg Plotted: 2/28/2020 3:13 PM By: Eric Neil



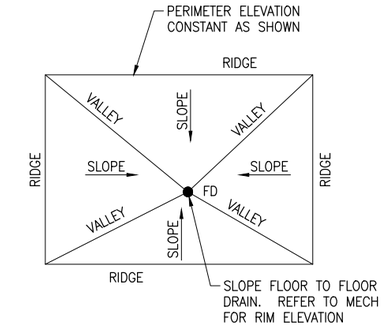
DETAIL NOTES:

1. GRATING DEPTH "T" AS NOTED ON DRAWINGS.
2. ALL EDGES AND OPENINGS ARE TO BE BANDED.
3. WEIGHT OF INDIVIDUAL GRATING SECTION SHALL NOT EXCEED 80 LBS.
4. METAL BEARING BARS ARE TO BE DEPTH "T"x3/16" @ 1 3/16" OC. CROSS BARS ARE TO BE AT 4" OC.
5. PROVIDE A MINIMUM OR 4 CLIPS PER GRATING PANEL AND LOCATE APPROXIMATELY 4" FROM PANEL CORNERS. MAXIMUM SPACING OF CLIPS IS 3'-0".
6. MATERIALS:
   ALUMINUM GRATING – USE ALUMINUM ANGLE SUPPORTS AND STAINLESS STEEL BOLTS AND CLIPS.
   GALVANIZED STEEL GRATING – USE GALVANIZED STEEL SUPPORTS, BOLTS, AND CLIPS. HOT-DIP GALVANIZE AFTER FABRICATION.
   STAINLESS STEEL GRATING – USE 316 STAINLESS STEEL ANGLE SUPPORTS, BOLTS, AND CLIPS.

METAL GRATING

NOT TO SCALE

S
4416



FLOOR SLOPE

NOT TO SCALE

S
4501

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN
PROFESSIONAL ENGINEER
STATE OF UTAH
No. 176658
2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED R. DAVIS
APPROVED S. COHEN

DESIGN
DESIGN K. SMOOT
DRAWN K. SMOOT

STRUCTURAL
GENERAL STRUCTURAL DETAILS - 4

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

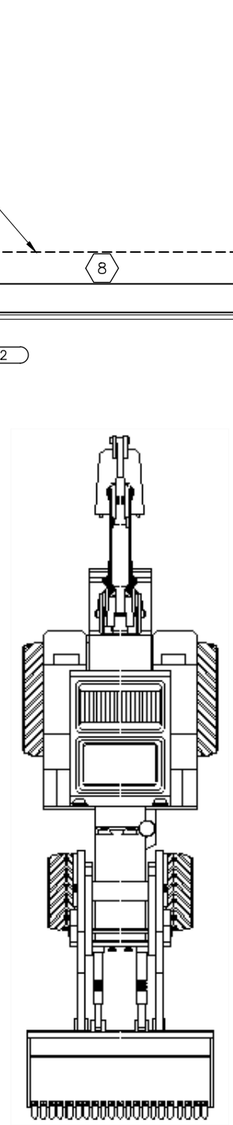
DRAWING NO.
GS-05

SHEET 33 OF 58

P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_GS-05.dwg Plotted: 2/28/2020 3:12 PM By: Eric Neil

NOTES:

1. ⊗ – REPRESENTS VALVE OR EQUIPMENT, SEE DRAWING M–03.
2. MINIMUM SLOPE FOR ALL 4" DRAIN PIPES SHALL BE 1/4/FT, AND ⅛"/FT FOR 6" DRAIN PIPES.
3. X – REPRESENTS LOCATION OF PIPE SUPPORTS (IN PLAN ONLY). SEE (M 3005)
4. ALL FLANGES AND FITTINGS SHALL BE STEEL STD WEIGHT 150# RATED.
5. ALL PIPING UNDER THE BUILDING SHALL BE CONCRETE ENCASED.
6. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR REGARDING FINAL LOCATION OF CONDUITS.
7. PROVIDE 1–1/2" TEE AND 1–1/2" X 3/4" REDUCER FOR EMERGENCY EYEWASH SUPPLY LINE.
8. SECURE PIPING ALONG TRENCH DRAIN WALLS WITH UNI–STRUT SUPPORTS AT A MAXIMUM DEPTH OF 6" BELOW FINISHED FLOOR.
9. PROVIDE HOUSEKEEPING PAD FOR ALL FLOOR SET EQUIPMENT, SEE STRUCTURAL DRAWINGS.
10. INSTALL 1" WATERLINE FOR CHLORINE RESIDUAL MONITORING. INSTALL WITH PRESSURE REDUCER AND BRASS BALL VALVES.
11. (XX–0X) – REPRESENTS HVAC EQUIPMENT, SEE DRAWING H–01.
12. PROVIDE 1/2" CONNECTION LOCATED BETWEEN WELL DISCHARGE HEAD AND PUMP TO WASTE TEE AND INSTALL 1/2" WATERLINE FOR TURBIDITY AND MANGANESE MONITORING. PIPE TO BE INSTALLED UNDERGROUND BETWEEN PUMP AND MONITORING EQUIPMENT. INSTALL WITH PRESSURE REDUCER AND BRASS BALL VALVES.
13. CONNECT TO TABLET CHLORINATION SYSTEM PER MANUFACTURERS RECOMMENDATIONS.
14. INSTALL ½" POLYETHYLENE TUBING AND NECESSARY FITTINGS FOR POLYPHOSPHATE DOSING SYSTEM. RUN TUBING IN TRENCH DRAIN TO KEEP WALKWAY CLEAR. CONNECT TO METERING PUMP PER MANUFACTURERS RECOMMENDATIONS.
15. ROUTE CONDENSATE FROM HVAC UNIT TO NEAREST ROOF DRAIN CONNECTION.
16. 4" SCH 40 PVC WITH LONG RADIUS SWEEP 90° BENDS FOR FUTURE WATER SOFTENER AND HEATER WATER LINES. EXTEND UP 4" ABOVE FLOOR AND CAP.



PLAN VIEW
3/8" = 1'–0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
STATE OF UTAH
2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED E. NEIL APPROVED E. NEIL

DESIGN DESIGN E. NEIL DRAWN J. COLLINS

MECHANICAL
MECHANICAL PLAN

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
M-01
SHEET 34 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_M-01.dwg Plotted: 3/5/2020 11:53 AM By: Eric Neil

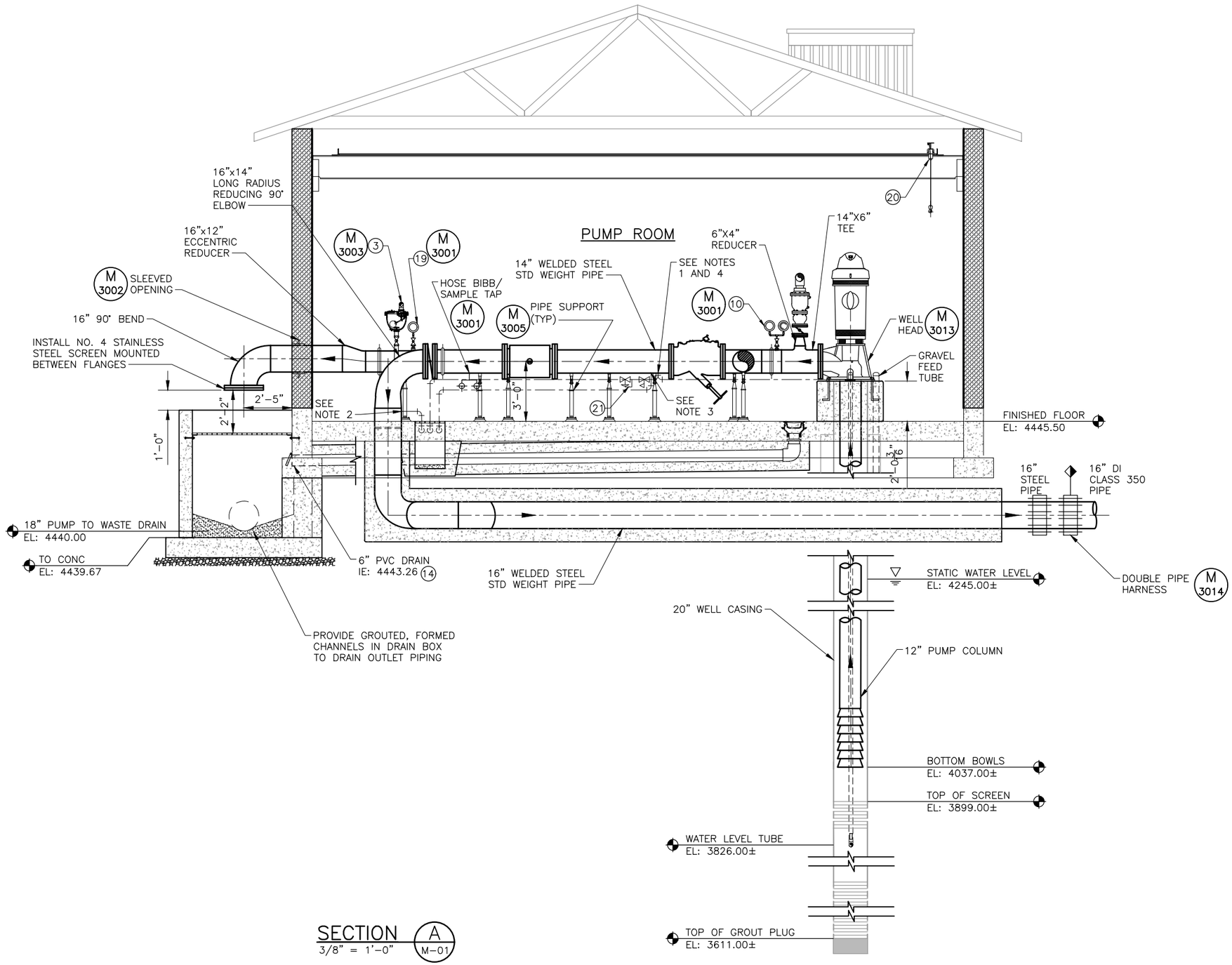
NOTES:

1. PROVIDE 1–1/2" CONNECTION LOCATED ON 14" MAIN LINE IMMEDIATELY AFTER CHECK VALVE. INSTALL 1–1/2" PVC SCH 80 PIPE TO SUPPLY WATER TO TABLET CHLORINATION SYSTEM. RUN PIPING IN TRENCH DRAIN TO KEEP WALKWAY CLEAR. CONNECT TO TABLET CHLORINATION SYSTEM PER MANUFACTURERS RECOMMENDATIONS. SUPPORT WITH STAINLESS STEEL UNISTRUT SECURED TO FLOOR.

2. PROVIDE 1–1/2" CONNECTION LOCATED BELOW LONG RADIUS 90° ELBOW. INSTALL 1–1/2" SCH 80 PVC PIPE FOR RETURN LINE FROM THE TABLET CHLORINATION SYSTEM TO 14" MAIN LINE. RUN PIPING IN TRENCH DRAIN TO KEEP WALKWAY CLEAR. CONNECT TO TABLET CHLORINATION SYSTEM PER MANUFACTURERS RECOMMENDATIONS. TAP INTO PIPE WITH HASTELLOY C–276 INJECTION QUILL (SAF–T–FLO MODEL EB–159–S–H–7–0–01 OR APPROVED EQUAL), STRAINER, AND ½" BALL VALVE. ALL PIPING AND FITTINGS SHALL BE SCH 80 PVC.

3. PROVIDE 1" CONNECTION LOCATED ON 14" MAIN LINE IMMEDIATELY AFTER CHECK VALVE. INSTALL 1" PVC SCH 80 PIPE AND NECESSARY FITTINGS FOR POLYPHOSPHATE DOSING SYSTEM. RUN PIPE IN TRENCH DRAIN TO KEEP WALKWAY CLEAR. CONNECT TO METERING PUMP PER MANUFACTURERS RECOMMENDATIONS.

4. PROVIDE 1" PVC SCHEDULE 80 WATER LINE TO PUMP FOR PUMP LUBRICATION. INSTALL WITH PRESSURE REDUCER SET TO 60 PSI AND BRASS ISOLATION BALL VALVE.



SECTION A M-01
3/8" = 1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED E. NEIL
APPROVED E. NEIL

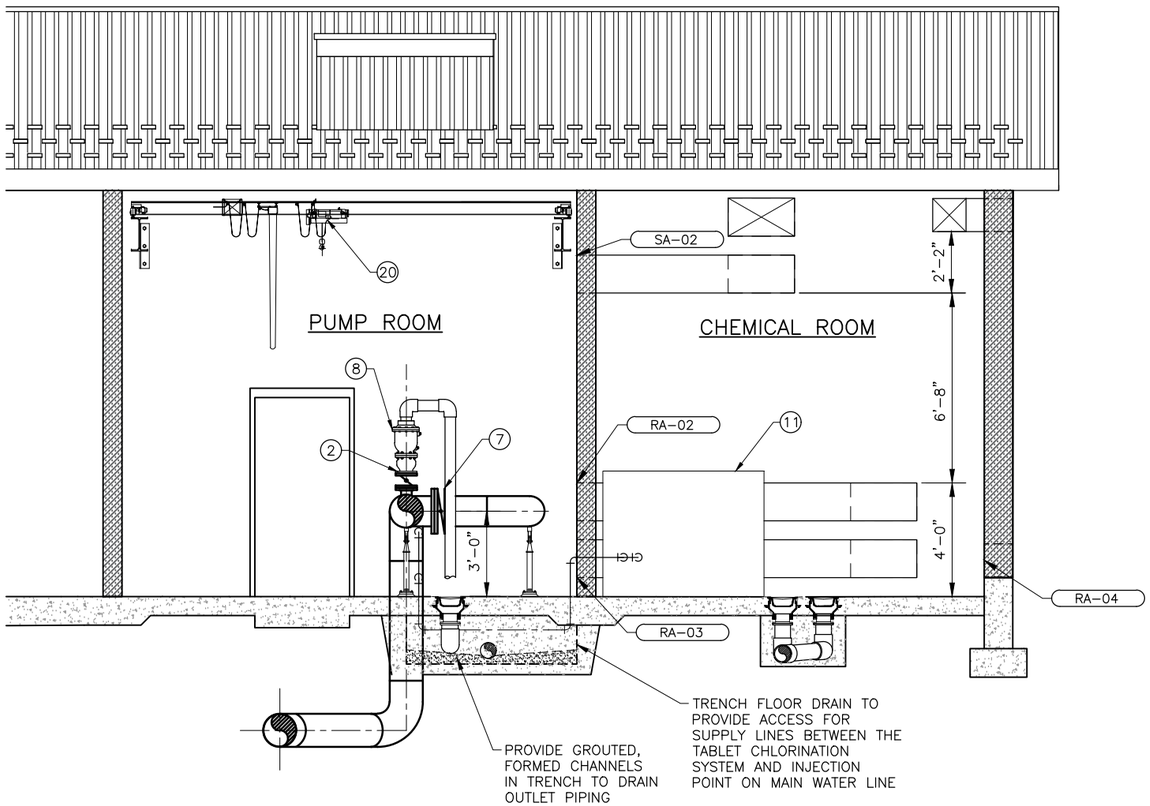
DESIGN
DESIGN E. NEIL
DRAWN J. COLLINS

MECHANICAL
MECHANICAL SECTION - 1

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

DRAWING NO.
M-02
SHEET 35 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_M-02.dwg Plotted: 3/5/2020 11:49 AM By: Eric Neil



SECTION B / M-01
3/8" = 1'-0"

VALVE AND EQUIPMENT SCHEDULE

NO.	DESCRIPTION	SIZE	JT TYPE	REMARKS
1	VERTICAL TURBINE PUMP	14-IN DISCHARGE	FL	700 HP MOTOR, 2,722 GPM (6.06 CFS) @ 689 TDH, MAX @ 60Hz, WITH BEST PUMP EFFICIENCY SET FOR 2,500 GPM
2	BUTTERFLY VALVE	4-INCH	FL	MANUAL LEVER
3	AIR RELEASE VALVE	1-INCH	NPT	VAL-MATIC MODEL 25.6 OR APPROVED EQUAL
4	CHECK VALVE	14-INCH	FL	SLANTING OR TILTED DISC TYPE, APCO MODEL 800 OR VALMATIC MODEL 9808
5	PUMP CONTROL VALVE	10-INCH	FL	GLOBE STYLE DEEP WELL CLA-VAL MODEL 61-02, FUSION BONDED EPOXY LINED AND COATED, SST INTERNAL TRIM, TUBES, AND FITTINGS. EQUIPPED WITH ANTICAVITATION TRIM
6	MAGNETIC FLOW METER	14-INCH	FL	SIEMENS WITH WALL MOUNTED TRANSMITTER, SEE ELECTRICAL PLANS
7	BUTTERFLY VALVE	14-INCH	FL	HANDWHEEL OPERATED
8	WELL SERVICE AIR VALVE	4-INCH	FL	AIR VALVE WITH REGULATED-EXHAUST DEVICE, VALMATIC MODEL 104SS OR EQUAL
9	EMERGENCY EYE WASH STATION	--	--	WALL MOUNTED EMERGENCY EYEWASH STATION (GUARDIAN OR EQUAL). DRAIN TO FLOOR DRAIN
10	PRESSURE INDICATING TRANSMITTER/SWITCH	--	--	PRESSURE TRANSMITTER SHALL HAVE LOCAL READOUT
11	TABLET CHLORINATION UNIT	--	--	ACCU-TAB POWERPRO 3150 SERIES OR APPROVED EQUAL; UNIT SHALL HAVE BUILT IN TABLET WEIGHT SCALE, 150 LB TABLET CAPACITY, 30 GALLON SOLUTION TANK, PIPING, PUMP, ELECTRICAL PANELS AND ALL OTHER REQUIRED COMPONENTS FOR A COMPLETE OPERABLE SYSTEM
12	ELECTRIC UNIT HEATER	5 KW	--	HEATER TO BE WALL MOUNTED, SEE DRAWING H-01 FOR HVAC EQUIPMENT SCHEDULE
13	CHLORINE RESIDUAL ANALYZER	0.1-5.0 MG/L	--	PROVIDE PRESSURE REDUCER, BRASS BALL VALVES, AND SMOOTH NOSE SAMPLING TAP; HACH CL17 OR APPROVED EQUAL; ROUTE DRAIN TO FLOOR DRAIN BENEATH INSTRUMENT
14	FLAPGATE VALVE	4-INCH		WATERMAN FLAPPER VALVE, MODEL F-10
15	BUTTERFLY VALVE	12-INCH	--	HANDWHEEL OPERATED
16	TURBIDIMETER	0-10 NTU	--	HIGH TURBIDITY ALARM SET TO 2.5 NTU, HACH TU5300 OR APPROVED EQUAL; ROUTE DRAIN TO FLOOR DRAIN BENEATH INSTRUMENT
17	TOTAL MANGANESE ANALYZER	0-1 MG/L	--	HACH EZ2000 COLORIMETRIC ANALYZER FOR TOTAL MANGANESE; ROUTE DRAIN TO FLOOR DRAIN BENEATH INSTRUMENT
18	POLYPHOSPHATE DOSING SYSTEM	0-6 GPD	--	POLYPHOSPHATE SYSTEM FOR UP TO 6 GAL/DAY OF 24-30% POLYPHOSPHATE WITH 20:1 TURN DOWN. STORAGE TANK CAPACITY TO BE 250 GALLONS MINIMUM. CONTRACTOR SHALL FURNISH AND INSTALL ALL COMPONENTS, PIPE, FITTINGS, VALVES, ADAPTERS, SUPPORTS, AND BRACKETS TO MAKE A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE DOSING AT SITE WITH OWNER. SEE DETAIL M/3015.
19	PRESSURE INDICATING TRANSMITTER	--	--	PRESSURE TRANSMITTER SHALL HAVE LOCAL READOUT
20	BRIDGE CRANE	--	--	THE HOIST SHALL BE ABLE TO SUPPORT 2,000 LBS AND BE EQUIPPED WITH MOTORIZED TROLLEY AND 1-TON MONORAIL BRIDGE. THE WIRE ROPE REEVING SHALL BE 2-PART DOUBLE, CROSS MOUNTED OR SIMILAR TYPE. SEE SPECIFIATIONS FOR DETAILS.
21	REDUCED PRESSURE ASSEMBLY	1½-INCH	THRD	FEBCO OR APPROVED EQUAL

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 2/27/2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

REVIEW
CHECKED B. MAYERS
APPROVED E. NEIL

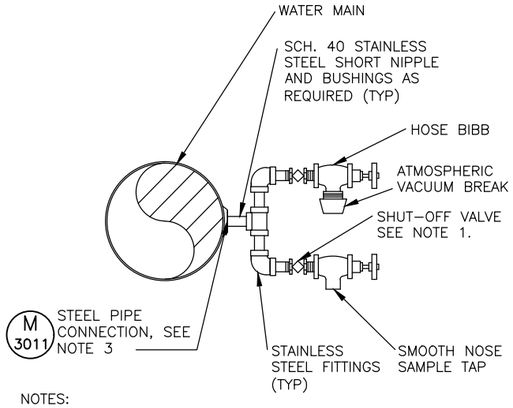
DESIGN
DESIGN E. NEIL
DRAWN J. COLLINS

MECHANICAL
MECHANICAL SECTION - 2

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

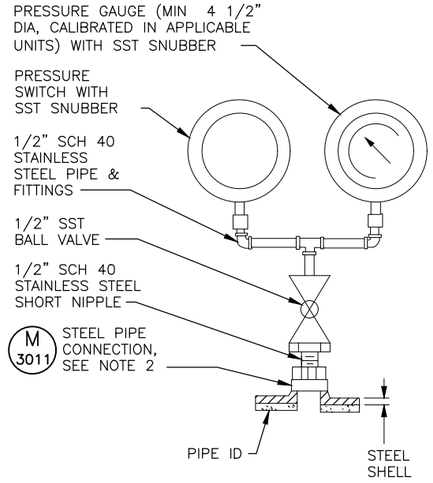
DRAWING NO.
M-03
SHEET 36 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_M-03.dwg Plotted: 3/4/2020 8:33 AM By: Eric Neil



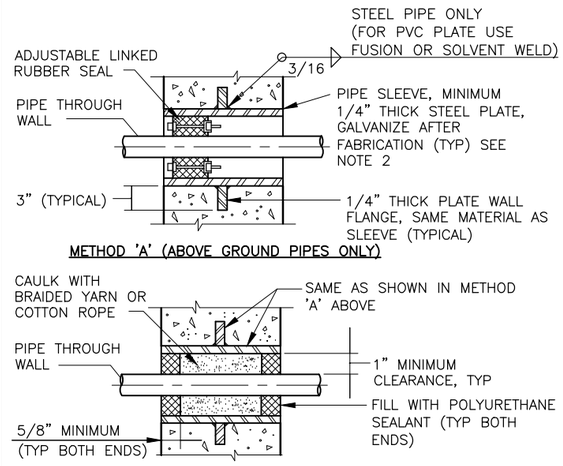
NOTES:
1. ALL HOSE BIBBS SHALL BE ASSE 1019 APPROVED OR HAVE AND ASSE 1011 HOSE BIBB VACUUM BREAKER AND ARE TO BE CONTROLLED BY INDIVIDUAL SHUT–OFF VALVES (BALL VALVES) EXCEPT WHERE INDIVIDUALLY CONTROLLED BRANCH MAIN SERVES HOSE BIBBS ONLY.
2. FOR SIZE AND LOCATION SEE DRAWINGS.
3. ALL FITTINGS, VALVES, NIPPLES, GAUGES AND WELDS SHALL BE ABLE TO MEET OR EXCEED TEST PRESSURE.
4. ROTATE AS DIRECTED BY OWNER.

HOSE BIB/SAMPLE TAP
NTS — M 3000



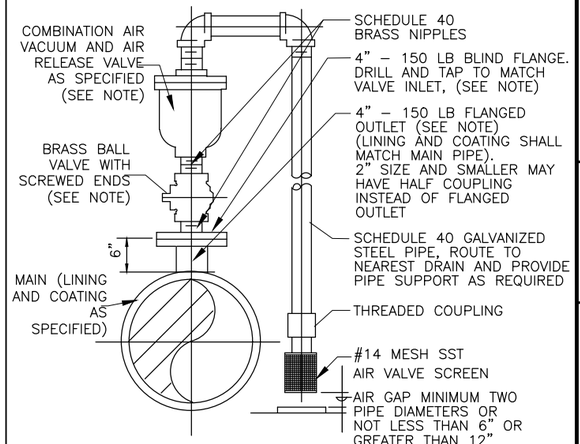
NOTES:
1. GAUGES SHALL BE RATED FOR APPROPRIATE OPERATING PRESSURES BASE ON LOCATION.
2. ALL FITTINGS, VALVES, NIPPLES, GAUGES AND WELDS SHALL BE ABLE TO MEET OR EXCEED TEST PRESSURE.

PRESSURE TRANSMITTER AND PRESSURE SWITCH
NTS — M 3001



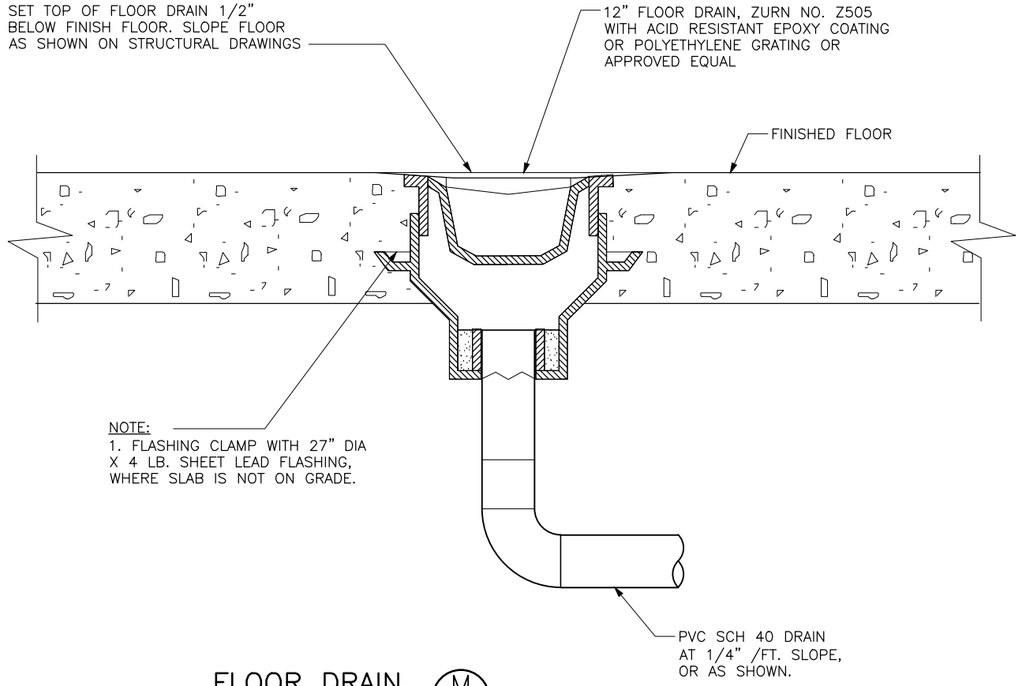
1. FOR WATER BEARING WALLS, USE METHOD 'A' WITH ADJUSTABLE LINKED RUBBER SEAL AT BOTH ENDS.
2. SLEEVES ARE NOT REQUIRED IN CORE DRILLED WALLS, PENETRATIONS THROUGH EXISTING WALLS, OR FLOORS

SLEEVED PIPE OPENING
NTS — M 3002

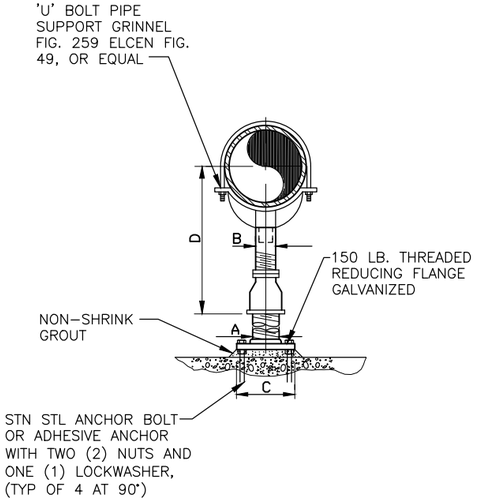


NOTE :
OUTLET, VALVES, NIPPLES AND ALL OTHER FITTINGS BETWEEN MAINLINE AND AIR VALVE SHALL BE SUITED TO MEET OR EXCEED TEST PRESSURE.

AIR VACUUM AND AIR RELEASE VALVE ASSEMBLY
NTS — M 3003



FLOOR DRAIN
NTS — M 3004



DIMENSION TABLE					
PIPE SIZE	A	B	C	D MIN	D MAX
2–1/2"	2–1/2"	1–1/2"	9"	8"	11–1/2"
3"	2–1/2"	1–1/2"	9"	8–1/4"	11–3/4"
3–1/2"	2–1/2"	1–1/2"	9"	8–1/2"	12–0"
4"	3"	2–1/2"	9"	10–1/4"	14–0"
6"	3"	2–1/2"	9"	11–5/8"	15–1/4"
8"	3"	2–1/2"	9"	13–5/8"	16–1/2"
10"	3"	2–1/2"	9"	14–5/8"	18–1/4"
12"	3"	2–1/2"	9"	15–5/8"	19–3/4"
14"	4"	3"	11"	18–7/8"	20–3/4"
16"	4"	3"	11"	19–7/8"	22–1/4"
18"	6"	3–1/2"	13–1/2"	21–1/4"	24"
20"	6"	3–1/2"	13–1/2"	23–1/4"	25–1/2"
24"	6"	4"	13–1/2"	26–1/2"	28–1/4"
30"	6"	4"	13–1/2"	29–5/8"	31–1/2"
32"	6"	4"	13–1/2"	30–5/8"	32–3/4"
36"	6"	4"	13–1/2"	32–5/8"	34–3/4"

NOTE:
ENTIRE UNIT SHALL BE GALVANIZED AFTER FABRICATION.

ADJUSTABLE PIPE SUPPORT WITH U–BOLT
NTS — M 3005

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — ERIC W. NEIL — 7702647 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED B. MAYERS
APPROVED E. NEIL

DESIGN
DESIGN E. NEIL
DRAWN J. COLLINS

MECHANICAL

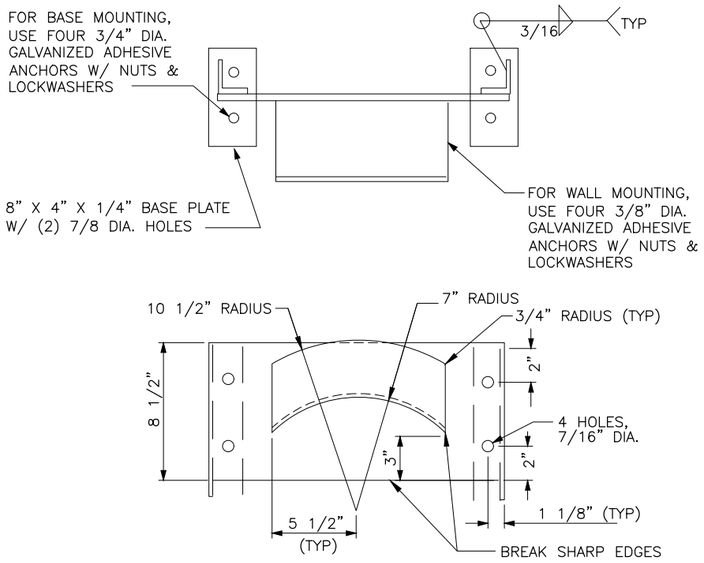
GENERAL MECHANICAL DETAILS - 1

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
GM-01

SHEET 37 OF 58

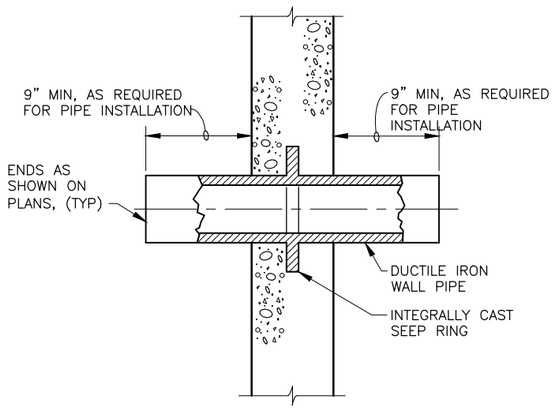
P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_GM-01.dwg Plotted: 2/28/2020 2:09 PM By: Eric Neil



NOTES:

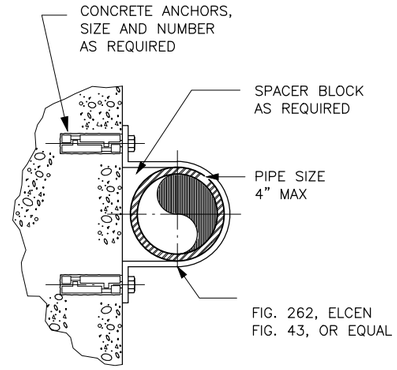
1. WHERE HOSE RACK IS FREE–STANDING, PROVIDE (2) STL. 2 X 2 X 1/4" BASE PLATES. (OMIT BASE PLATES WHERE ANGLES CAN BE SET IN CONCRETE.)
2. CONSTRUCTION: B GA. STEEL SHEET, ALL WELDED, GALVANIZED AFTER FABRICATION.

HOSE RACK
NTS — M 3006



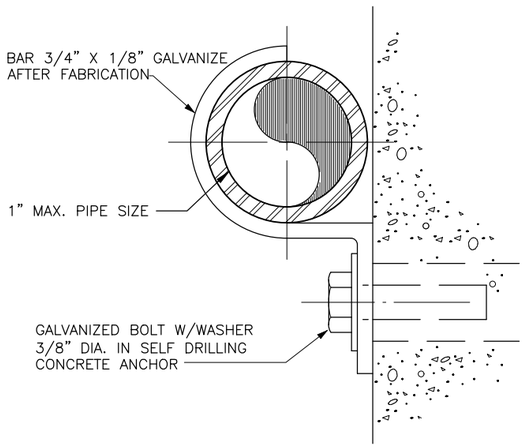
NOTE:
1. COAT WALL PIPE WITH SPECIFIED PAINT SYSTEM PRIOR TO CONCRETE PLACEMENT.
2. EXTEND END OF WALL PIPE 9" FROM WALL, UNLESS SHOWN OTHERWISE ON DRAWINGS.

DUCTILE IRON WALL PIPE
NTS — M 3007



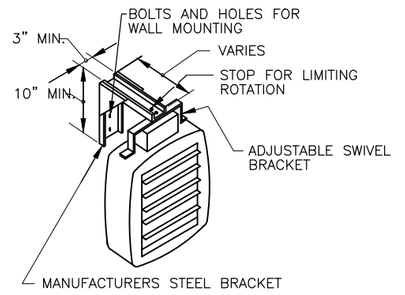
NOTE:
ALL HARDWARE SHALL BE STAINLESS STEEL

PIPE SUPPORT
NTS — M 3008



NOTES:
1. WHERE SUBMERGED, PIPE CLAMP, BOLT, WASHER, SHIELD AND SELF DRILLING CONCRETE ANCHOR TO BE TYPE 316 STAINLESS STEEL.
2. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP WITH LOOSE FIT, WRAP COPPER TUBES WITH 2" WIDE STRIP OF RUBBER FABRIC.

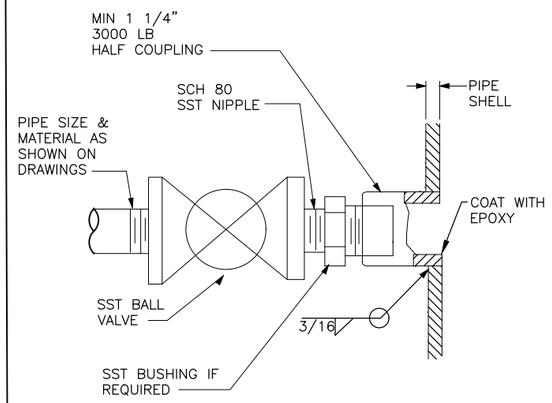
PIPE CLAMP FOR FOR INDIVIDUAL PIPES
NTS — M 3009



NOTES:
1. HEATER TO BE CONTROLLED FROM WALL–MOUNTED THERMOSTAT PROVIDED WITH HEATER UNIT, INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE SHOWN.
2. SEE ELECTRICAL DRAWINGS FOR CONNECTIONS.

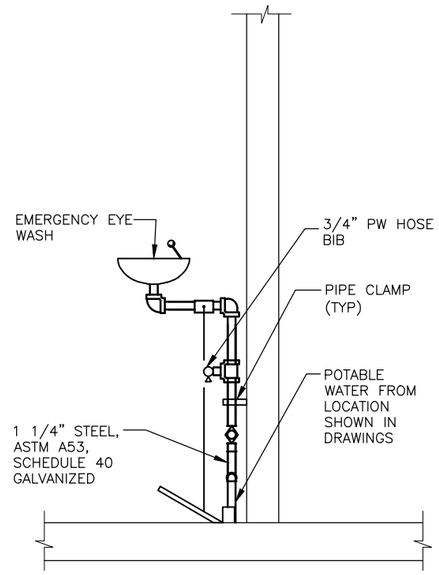
WALL MOUNTING POSITION

ELECTRIC UNIT HEATER
NTS — M 3010



NOTES:
1. IF PIPE MATERIAL IS STAINLESS STEEL, SAME TYPE MATERIAL ATTACHMENT SHALL BE USED.
2. TAPPED CONNECTION TO BE USED WHERE MAIN PIPE IS CAST IRON OR DUCTILE IRON.
3. ALL SST SHALL BE TYPE 316.

PIPE CONNECTION 2 1/2" AND SMALLER
NTS — M 3011



EYE WASH STATION
NTS — M 3012

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — ERIC W. NEIL — 7702647 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED B. MAYERS APPROVED E. NEIL

DESIGN DESIGN E. NEIL DRAWN J. COLLINS

MECHANICAL

GENERAL MECHANICAL DETAILS - 2

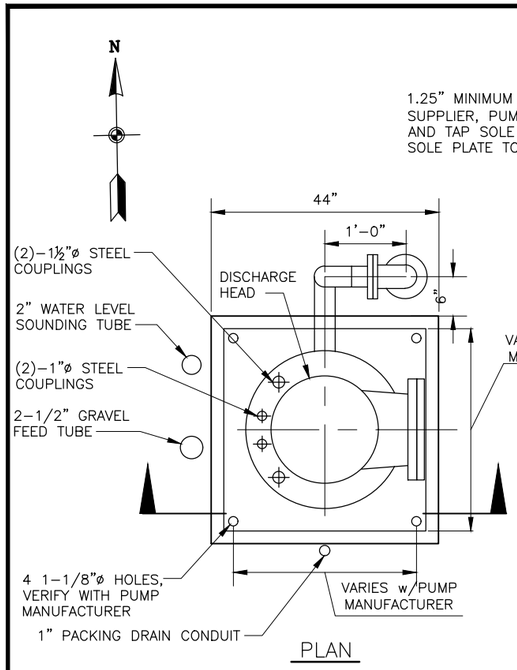
PROJECT NUMBER 202-18-01

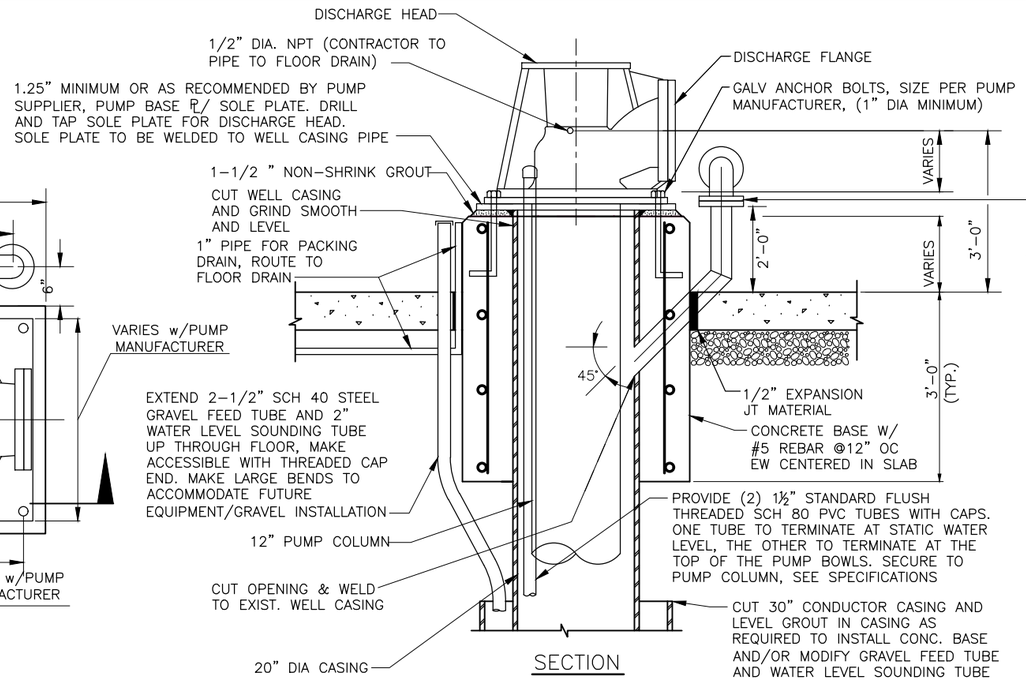
DATE: FEBRUARY 2020

DRAWING NO. GM-02

SHEET 38 OF 58

P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_GM-02.dwg Plotted: 2/28/2020 2:08 PM By: Eric Neil





3" SCH 40 STEEL VENT PIPE WITH #14 SST INSECT SCREEN, SEE PLAN FOR ROTATION

WELL HEAD NOTES:

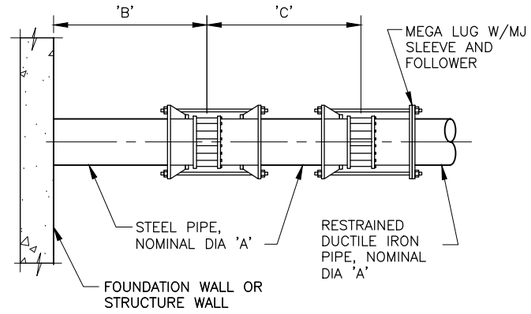
1. WELL/PUMP HEAD ELEMENTS MAY HAVE BEEN ROTATED ON THIS DRAWING FOR GRAPHICAL CLARITY.
2. VERIFY ALL PUMP AND BARREL DIMENSIONS WITH MANUFACTURER.
3. COORDINATE WITH ELECTRICAL CONTRACTOR AND ELECTRICAL DRAWINGS FOR WELL LEVEL TRANSDUCER REQUIREMENTS. TRANSDUCER WILL BE PROVIDED BY PUMP SUPPLIER. INSTALL WELL LEVEL TRANSDUCER IN ONE OF THE 1" PVC TUBES DOWN TO TOP OF BOWLS, COORDINATE DEPTH WITH PUMP SUPPLIER.
4. CONTRACTOR SHALL COORDINATE REQUIRED CONCRETE PUMP BASE HEIGHT WITH PUMP SUPPLIER/INSTALLER.

WELL HEAD DETAIL

NTS

M 3013

DIMENSIONS IN INCHES (MM)		
'A'	'B'	'C'
16 (350)	24 (600)	56 (1420)

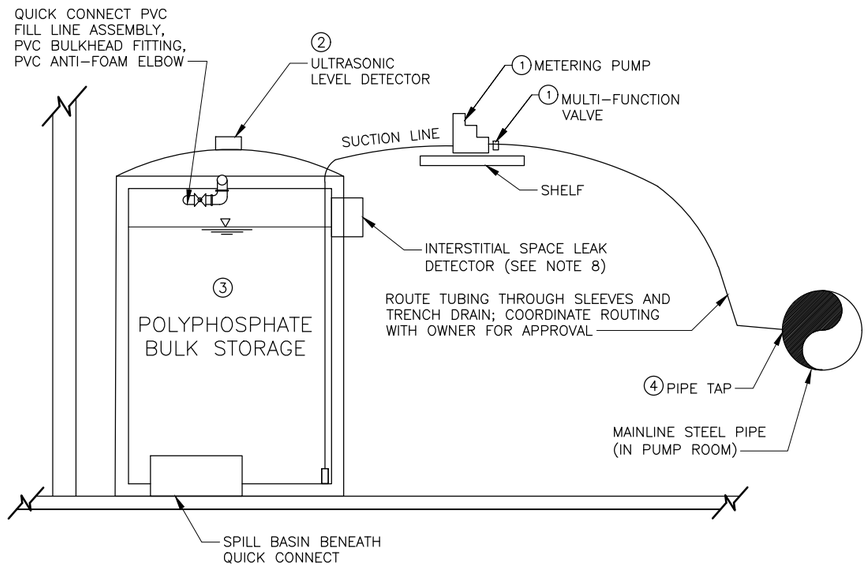


NOTE:
CONTRACTOR SHALL SUBMIT HARNESS TO ENGINEER FOR APPROVAL.

DOUBLE PIPE HARNESS

NTS

M 3014



POLYPHOSPHATE SYSTEM SCHEMATIC

SCALE: NTS

M 3015

LIST OF EQUIPMENT

ITEM NO.	ITEM	SIZE	DESCRIPTION
①	METERING PUMP SYSTEM WITH MULTI-FUNCTION VALVE AND PIPING		GRUNDFOS DIGITAL DOSING PUMP AR CONTROL (MODEL DDA 7.5-16 AR-PV/V/C-F-31U7U7BG) TUBING AND FOOT VALVE; MULTI-FUNCTION VALVE FOR BACK PRESSURE, PRESSURE RELIEF AND ANTI-SIPHON PROTECTION; INJECTION CHECK VALVE. SUPPORT ON FIBERGLASS OR HDPE SHELF.
②	ULTRASONIC LEVEL DETECTOR		FLOW LINE LU27-00 OR APPROVED EQUAL.
③	POLYPHOSPHATE STORAGE TANK SYSTEM	SEE MECHANICAL PLANS	DUAL WALLED SYSTEM WITH INTERSTITIAL LEAK DETECTION. ASSMANN IMT SERIES OR APPROVED EQUAL. PVC FILL LINE ASSEMBLY.
④	TAP FOR POLYPHOSPHATE INJECTOR	1"	INJECTOR WITH CHECK VALVE, CORP STOP AND CHAIN ASSEMBLY

NOTES:

1. THIS SCHEMATIC INDICATES THE MAJOR REQUIRED COMPONENTS FOR A POLYPHOSPHATE SYSTEM FOR UP TO 6 GAL/DAY OF 24-30% POLYPHOSPHATE WITH 20:1 TURN DOWN. CONTRACTOR SHALL FURNISH AND INSTALL ALL COMPONENTS, PIPE, FITTINGS, VALVES, ADAPTERS, SUPPORTS, AND BRACKETS TO MAKE A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE DOSING AT SITE WITH OWNER.
2. PROVIDE NAMED COMPONENTS OR APPROVED EQUAL.
3. PROVIDE BULKHEADS, FITTINGS, REDUCERS, AND SEALS AS REQUIRED TO MAKE CONNECTIONS. ALL MATERIALS SHALL BE SUITABLE FOR POLYPHOSPHATE.
4. ALL PIPE, FITTINGS AND VALVES SHALL BE POLYETHYLENE OR OTHER SUITABLE MATERIALS RECOMMENDED BY MANUFACTURER AND APPROVED BY OWNER AND ENGINEER.
5. ALL NON POLYETHYLENE PIPE, VALVES AND FITTINGS SHALL BE AS RECOMMENDED BY SUPPLIER FOR CHEMICAL.
6. PROVIDE TUBING, FITTINGS AND BRACKETS TO ROUTE AND SECURE THE TUBING AS REQUIRED AND RECOMMENDED BY MANUFACTURER.
7. MOUNT COMPONENTS TO WALL AND SECURE AND SUPPORT AS REQUIRED WITH FIBER GLASS OR OTHER APPROVED PIPE HANGERS.
8. LEAK DETECTOR SHALL HAVE NEMA 4X ENCLOSURE, AUDIBLE ALARM, DUAL PROBE, AND ALARM LIGHT. 120V AC FEED WILL BE PROVIDED TO ENCLOSURE, IF REQUIRED CONTRACTOR TO PROVIDE 24VDC POWER SUPPLY.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

REVIEW CHECKED B. MAYERS APPROVED E. NEIL

DESIGN DESIGN E. NEIL DRAWN N. ROGERS

MECHANICAL

GENERAL MECHANICAL DETAILS - 3

DATE: FEBRUARY 2020 PROJECT NUMBER 202-18-01

DRAWING NO. GM-03

SHEET 39 OF 58

P:\ogden city\202-18-01 ogden airport well\design phase\Drawings\Sht\2021801_GM-03.dwg Plotted: 2/28/2020 2:08 PM By: Eric Neil

ELECTRICAL SYMBOLS LEGEND

	SELECTOR SWITCH 2 POSITION		THERMAL OVERLOAD RELAY
TR	NORMALLY OPEN TIME DELAY CLOSING AFTER COIL ENERGIZED	SPD	SURGE PROTECTION DEVICE
TR	NORMALLY CLOSED TIME DELAY OPENING AFTER COIL ENERGIZED	+ −	DC BLOCKER
W	INDICATOR LIGHT		DISCIPLINE DESIGNATION
⊗	REMOTE DEVICE CONNECTION	X XXX	DETAIL CALL OUT
	CLOSED RELAY CONTACT		DETAIL DESIGNATION
||	OPEN RELAY CONTACT		1'x4' LIGHT
□	TERMINAL TO EXTERNAL REMOTE DEVICE		4' WALL MOUNT LIGHT
○	WIRE TERMINAL OR CONNECTION POINT		EMERGENCY LIGHT (TWO HEADS)
M	SINGLE PHASE MOTOR		GROUND ROD AND WELL
	MOTOR OVERLOAD RELAY		GROUND ROD 3/4" x 10'−0" (UNLESS NOTED OTHERWISE)
	LIMIT SWITCH	■	GROUND CONNECTION BOLTED TYPE
CR	CONTROL RELAY	•	GROUND CONNECTION IRREVERSIBLE COMPRESSION OR EXOTHERMIC TYPE
	TRANSFORMER	○	GROUND RISER FROM THE GROUND PLATE (REBAR)
			CONDUIT EXPOSED
OFF ON REMOTE	SELECTOR SWITCH 3 POSITION MAINTAINED CONTACT		CONDUIT RUN UNDERGROUND OR IN CONCRETE
			BARE COPPER WIRE IN SLAB OR UNDERGROUND GRID, SIZE AS NOTED
	LEVEL SWITCH CLOSES ON FALLING LEVEL		TRANSFORMER W/ DELTA−Y AND GROUND
	LEVEL SWITCH CLOSES ON RISING LEVEL	M	UTILITY METER
	CONTROL SWITCH PUSHBUTTON, MOMENTARY CONTACT N.C.		UTILITY CT
	GROUND CONNECTION	HP	MOTOR, HORSEPOWER AS NOTED
F	FRACTIONAL HP MOTOR		CIRCUIT BREAKER
	CONTROL STATION		
J	JUNCTION BOX		ELECTRICAL PANEL
	DUPLEX RECEPTACLE		
	LIGHT FIXTURE TYPE AS INDICATED		FUSE
F	FUSED DISCONNECT	2	MOTOR STARTER NEMA SIZE AS NOTED
$	SINGLE LIGHT SWITCH	30A	DISCONNECT SWITCH SIZE AS NOTED
	DISCONNECT UNFUSED SIZE NOTED		
M	CONTACTOR/STARTER (NO. OF POLES SHOWN)		RECEPTACLE
C.B.	CIRCUIT BREAKER (NO. OF POLES SHOWN)		INCANDESCENT FIXTURE
	SOLENOID		POLE MOUNTED HID FIXTURE
	FLOW SWITCH CLOSES ON LOW FLOW		ELECTRICAL CONNECTION
	PRESSURE SWITCH CLOSES ON RISING PRESSURE		

EQUIPMENT GROUNDING CONDUCTORS

FUSE OR CB SIZE	SIZE (COPPER)
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0
1000	2/0
1200	3/0
1600	4/0
2000	250
2500	350

GROUNDING ELECTRODE CONDUCTOR SERVICE ENTRANCE OR SEPARATELY DERIVED SYSTEM

COPPER CONDUCTOR	WIRE SIZE
#2 OR SMALLER	#8
1 OR 1/0	#6
2/0 OR 3/0	#4
>3/0 THRU 350 KCMIL	#2
>350 KCMIL THRU 600 KCMIL	1/0

GENERAL NOTES:

1. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH−IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO ENSURE NEC CODE CLEARANCE REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
2. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH−IN.
3. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH−IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
4. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH ELECTRICAL ROOMS OR SPACES; OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN THE OTHER AREAS.
5. ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
6. FOR PACKAGE EQUIPMENT PROVIDED ON THE PROJECT, SOME CONDUITS AND WIRES ARE SHOWN ON THE DRAWINGS, BUT IT IS EXPECTED THAT SOME ADDITIONAL CONDUITS AND WIRES MAY BE REQUIRED BY EQUIPMENT MANUFACTURERS TO COMPLETE INSTALLATION. IT IS INCUMBENT UPON THE GENERAL CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH HIS SUBCONTRACTORS TO MAKE SURE THAT EQUIPMENT SUPPLIER PROVIDED ALL NECESSARY ELECTRICAL INFORMATION TO ELECTRICAL SUBCONTRACTOR FOR INCLUSION WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS.
7. IF OTHER THAN FIRST NAMED EQUIPMENT IS USED, IT SHALL BE CAREFULLY CHECKED FOR ELECTRICAL REQUIREMENTS AND CONTROL REQUIREMENTS OF ALTERNATE EQUIPMENT. SHOULD CHANGES OR ADDITIONS OCCUR IN ELECTRICAL WORK, OR THE WORK OF OTHER CONTRACTORS BE REVISED BY THE ALTERNATE EQUIPMENT, THE COST OF ALL CHANGES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
8. IT IS THE ELECTRICAL SUBCONTRACTOR'S RESPONSIBILITY TO RECEIVE THE COMPLETE SET OF PLANS IN ORDER TO INSURE THAT ALL ITEMS RELATED TO ELECTRICAL POWER AND CONTROL SYSTEMS ARE COMPLETELY ACCOUNTED FOR.
9. ALL EQUIPMENT DIMENSIONS SHOWN ON PLANS AND ELEVATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL USE THE SHOP DRAWINGS FOR PROPER LAYOUT, FOUNDATION AND PAD, ETC. FOR FINAL INSTALLATION WITHOUT ANY ADDITIONAL COST TO THE OWNER.
10. THE DRAWINGS GENERALLY ILLUSTRATE THE APPROXIMATE DESIRED LOCATION AND ARRANGEMENT OF OUTLETS, CONDUIT RUNS, EQUIPMENT AND OTHERS ITEMS. DETERMINE EXACT LOCATIONS IN THE FIELD BASED ON PHYSICAL SIZE AND ARRANGEMENT OF EQUIPMENT, FINISHED ELEVATIONS, EASEMENT LOCATIONS, AND OTHER OBSTRUCTIONS. LOCATIONS SHOWN ON THE DRAWINGS, HOWEVER, SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE.
11. THE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE CURRENT VERSION OF THE NEC, LOCAL, AND STATE CODES.

FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG NO.	VA	LAMP	MOUNTING	NOTES
F1	ENCLOSED INDUSTRIAL, FIBERGLASS HOUSING GASKETED, LED, 120 VOLT, WITH QMB MOUNTING BRACKET	HOLOPHANE	EVT4 6000LM PCL MD MVOLT 40K 80CRI QMB	49	LED	CEILING	
F2	EMERGENCY LIGHT WITH TWO HEADS, 90 MIN BATTERY POWER, WET LOCATION, 120 VAC	HOLOPHANE	DM30 WL LED	4	LED	WALL	
F3	LED WALL LUMINAIRE	LITHONIA LIGHTING	KAXW LED P1 40K R3 120 PER PIR DDBXD	29	LED	WALL	PHOTOCELL CONTROLLED W/ MOTION DETECTION

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — DOUGLAS MAX STEWART — LICENSED — No. 175312 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN CITY
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED D. YOUNGSTROM — APPROVED D. STEWART

DESIGN — DESIGN J. LAKE — DRAWN J. LAKE

ELECTRICAL

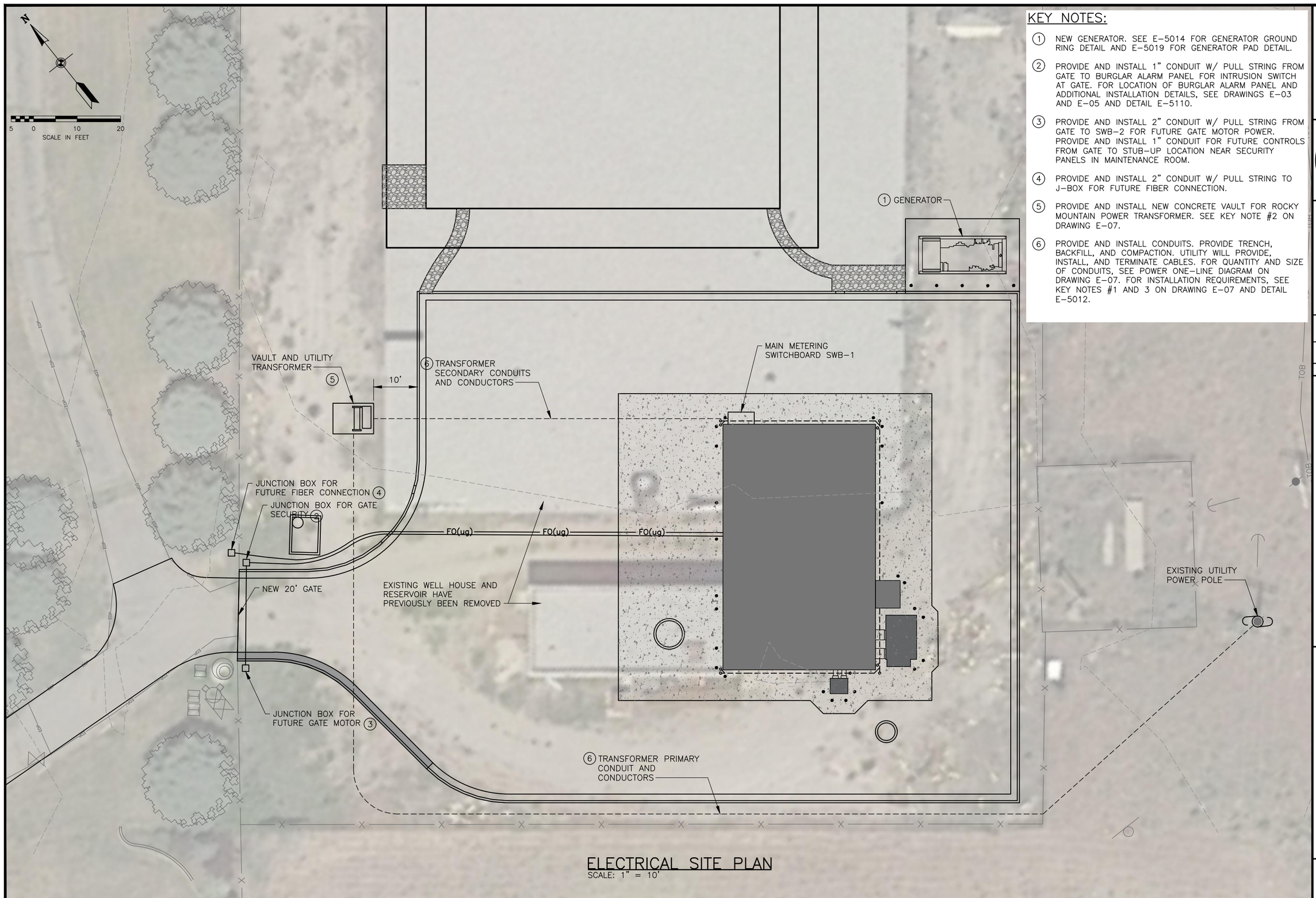
ELECTRICAL SYMBOLS

PROJECT NUMBER 202-18-01

DATE: FEBRUARY 2020

DRAWING NO. E-01

SHEET 40 OF 58



KEY NOTES:

1. NEW GENERATOR. SEE E-5014 FOR GENERATOR GROUND RING DETAIL AND E-5019 FOR GENERATOR PAD DETAIL.
2. PROVIDE AND INSTALL 1" CONDUIT W/ PULL STRING FROM GATE TO BURGLAR ALARM PANEL FOR INTRUSION SWITCH AT GATE. FOR LOCATION OF BURGLAR ALARM PANEL AND ADDITIONAL INSTALLATION DETAILS, SEE DRAWINGS E-03 AND E-05 AND DETAIL E-5110.
3. PROVIDE AND INSTALL 2" CONDUIT W/ PULL STRING FROM GATE TO SWB-2 FOR FUTURE GATE MOTOR POWER. PROVIDE AND INSTALL 1" CONDUIT FOR FUTURE CONTROLS FROM GATE TO STUB-UP LOCATION NEAR SECURITY PANELS IN MAINTENANCE ROOM.
4. PROVIDE AND INSTALL 2" CONDUIT W/ PULL STRING TO J-BOX FOR FUTURE FIBER CONNECTION.
5. PROVIDE AND INSTALL NEW CONCRETE VAULT FOR ROCKY MOUNTAIN POWER TRANSFORMER. SEE KEY NOTE #2 ON DRAWING E-07.
6. PROVIDE AND INSTALL CONDUITS. PROVIDE TRENCH, BACKFILL, AND COMPACTION. UTILITY WILL PROVIDE, INSTALL, AND TERMINATE CABLES. FOR QUANTITY AND SIZE OF CONDUITS, SEE POWER ONE-LINE DIAGRAM ON DRAWING E-07. FOR INSTALLATION REQUIREMENTS, SEE KEY NOTES #1 AND 3 ON DRAWING E-07 AND DETAIL E-5012.

ELECTRICAL SITE PLAN
SCALE: 1" = 10'

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
DOUGLAS MAX STEWART
LICENSED
No. 175372
STATE OF UTAH
2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN CITY
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED D. YOUNGSTROM
APPROVED D. STEWART

DESIGN
DESIGN J. LAKE
DRAWN J. LAKE

ELECTRICAL
ELECTRICAL SITE PLAN
DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
E-02
SHEET 41 OF 58

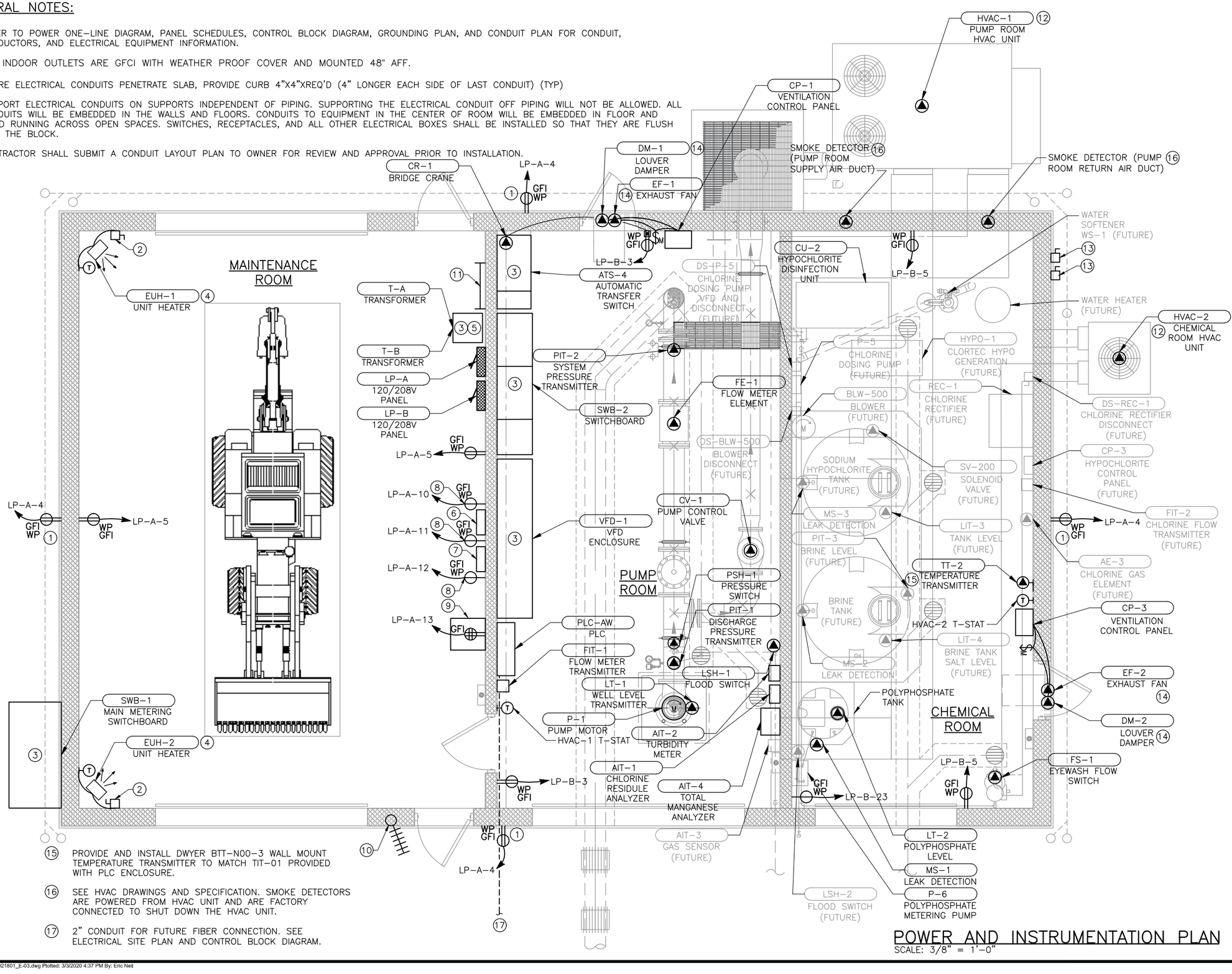
P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_E-02.dwg Plotted: 3/3/2020 4:39 PM By: Eric Neil

GENERAL NOTES:

1. REFER TO POWER ONE-LINE DIAGRAM, PANEL SCHEDULES, CONTROL BLOCK DIAGRAM, GROUNDING PLAN, AND CONDUIT PLAN FOR CONDUIT, CONDUCTORS, AND ELECTRICAL EQUIPMENT INFORMATION.
2. ALL INDOOR OUTLETS ARE GFCI WITH WEATHER PROOF COVER AND MOUNTED 48" AFF.
3. WHERE ELECTRICAL CONDUITS PENETRATE SLAB, PROVIDE CURB 4"X4"XREQ'D (4" LONGER EACH SIDE OF LAST CONDUIT) (TYP)
4. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND FLOORS. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE EMBEDDED IN FLOOR AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK.
5. CONTRACTOR SHALL SUBMIT A CONDUIT LAYOUT PLAN TO OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

KEY NOTES:

1. OUTSIDE GFCI OUTLETS WITH WHILE-IN-USE WEATHER PROOF COVER, HUBBLE, METALLIC WP26E OR WP26EH. MOUNT OUTLET 48" MIN ABOVE FINISH GRADE.
2. 480V, 30A, NEMA 1 DISCONNECT FOR UNIT HEATER.
3. INSTALL HOUSEKEEPING PAD UNDER VFD, ATS, SWITCHBOARDS, AND TRANSFORMER. SEE STRUCTURAL DETAIL S-4113 TYPE A ON DRAWING GS-03.
4. ELECTRIC UNIT HEATER, SEE MECHANICAL AND HVAC DRAWINGS.
5. TRANSFORMERS ARE STACKED. MOUNT T-A AT LEAST 2' ABOVE T-B. PROVIDE AND INSTALL UNISTRUT SUPPORT FRAME. SEE DETAIL E-5006.
6. DOOR ACCESS PANEL. SEE CONDUIT PLAN AND DETAILS E-5109 AND E-5110.
7. BURGLAR ALARM PANEL AND RADIO TRANSMITTER. SEE CONDUIT PLAN AND DETAILS E-5109 AND E-5110.
8. PROVIDE AND INSTALL (3) SINGLE GANG, 120V RECEPTACLES FOR DOOR ACCESS PANEL, BURGLAR ALARM PANEL, AND RADIO ALARM TRANSMITTER. SEE DETAIL E-5109, KEY NOTE #5 AND E-5110, KEY NOTE #4.
9. NETWORK CABINET, PROVIDED BY OWNER. PROVIDE AND INSTALL DOUBLE GANG W/ (4) 120V RECEPTACLES INSIDE CABINET. SEE DETAIL E-5109, KEY NOTE #4.
10. P2P AND CAT6 CABLE, PROVIDED AND INSTALLED BY OWNER. PROVIDE AND INSTALL 1" CONDUIT WITH PULL STRING FROM NETWORK CABINET TO LOCATION SHOWN ON ROOF. SEE DETAIL E-5017 FOR ADDITIONAL INSTRUCTIONS.
11. GROUND BAR. FOR CONNECTIONS, SEE DETAIL E-5016.
12. HVAC UNITS, SEE MECHANICAL AND HVAC DRAWINGS. PROVIDE AND INSTALL ¾" CONDUIT W/ PULL STRING FROM EACH HVAC UNIT TO THERMOSTAT LOCATION INSIDE BUILDING. COORDINATE WITH HVAC.
13. 480V, 100A, NEMA 3R DISCONNECT FOR HVAC-1 AND 240V, 2P, 60A, NEMA 3R DISCONNECT FOR HVAC-2.
14. EXHAUST FANS AND DAMPERS, SEE DETAIL E-5105. ALSO, SEE HVAC AND MECHANICAL.
15. PROVIDE AND INSTALL DWYER BTT-N00-3 WALL MOUNT TEMPERATURE TRANSMITTER TO MATCH TIT-01 PROVIDED WITH PLC ENCLOSURE.
16. SEE HVAC DRAWINGS AND SPECIFICATION. SMOKE DETECTORS ARE POWERED FROM HVAC UNIT AND ARE FACTORY CONNECTED TO SHUT DOWN THE HVAC UNIT.
17. 2" CONDUIT FOR FUTURE FIBER CONNECTION. SEE ELECTRICAL SITE PLAN AND CONTROL BLOCK DIAGRAM.



POWER AND INSTRUMENTATION PLAN
SCALE: 3/8" = 1'-0"

BOWEN COLLINS & ASSOCIATES
PROFESSIONAL ENGINEER — DOUGLAS MAX STEWART — No. 7753207 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED D. YOUNGSTROM — APPROVED D. STEWART

DESIGN — DESIGN J. LAKE — DRAWN J. LAKE

ELECTRICAL

POWER AND INSTRUMENTATION PLAN

DATE: FEBRUARY 2020 — PROJECT NUMBER 202-18-01

DRAWING NO. E-03

SHEET 42 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_E-03.dwg Plotted: 3/3/2020 4:37 PM By: Eric Neil

N

GROUND RING

TO GENERATOR (SEE E-02)

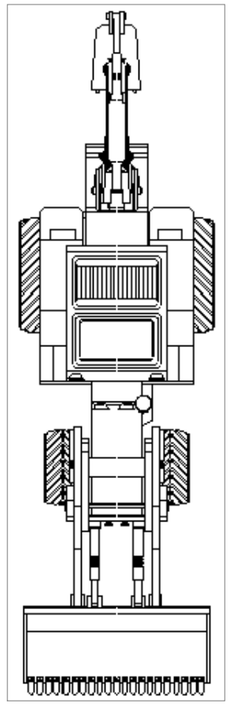
E 5002 (TYP.)

E 5003

GENERAL NOTES:

1. REFER TO POWER ONE-LINE DIAGRAM, PANEL SCHEDULES, CONTROL BLOCK DIAGRAM, AND CONDUIT PLAN FOR CONDUIT, CONDUCTORS, AND ELECTRICAL EQUIPMENT INFORMATION.
2. WHERE ELECTRICAL CONDUITS PENETRATE SLAB, PROVIDE CURB 4"X4"XREQ'D (4" LONGER EACH SIDE OF LAST CONDUIT) (TYP)
3. PROVIDE AND INSTALL A #4/0 AWG BARE COPPER GROUND RING BURIED NOT LESS THAN 30" BELOW THE EARTH'S SURFACE. CONNECT REBAR (GROUND RISERS) TO GROUND RING VIA #4/0 AWG BARE COPPER GROUND CABLE. THE MAIN METERING SWITCHBOARD AND PUMP SHALL BE CONNECTED TO THE GROUND RING WITH #4/0 AWG BARE COPPER GROUND CABLE. THE FLOW METER SHALL BE CONNECTED TO THE GROUND RING WITH #2/0 AWG BARE COPPER GROUND CABLE. THE GROUND RING SHALL BE A MINIMUM OF 2 FEET FROM BUILDING FOUNDATION. REFER TO GROUNDING PLAN SYMBOLS ON DRAWING E-01.
4. DRAWING SHOWS TYPICAL LOCATIONS OF GROUNDING SYSTEM COMPONENTS.
5. DRAWING SHOWS APPROXIMATE LOCATIONS AND MINIMUM NUMBER OF RISERS GROUNDING CONNECTIONS TO BE INSTALLED.
6. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND FLOORS. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE EMBEDDED IN FLOOR AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK.
7. CONTRACTOR SHALL SUBMIT A CONDUIT LAYOUT PLAN TO OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

MAINTENANCE ROOM



T-A TRANSFORMER

T-B TRANSFORMER

2

ATS-4 AUTOMATIC TRANSFER SWITCH

SWB-2 SWITCHBOARD

FE-1 FLOW METER ELEMENT

VFD-1 VFD ENCLOSURE

PUMP ROOM

P-1 PUMP MOTOR

SWB-1 MAIN METERING SWITCHBOARD

CHEMICAL ROOM

E 5001 (TYP.)

KEY NOTES:

1. CONNECT TRANSFORMERS TO GROUND RING WITH #8 AWG (T-A) AND #4 AWG (T-B) BARE COPPER GROUND CABLES.
2. GROUND BAR. FOR CONNECTIONS, SEE DETAIL E-5016.

GROUNDING PLAN

SCALE: 3/8" = 1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER LICENSED DOUGLAS MAX STEWART No. 175312 STATE OF UTAH

2/27/2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED D. YOUNGSTROM
APPROVED D. STEWART

DESIGN
DESIGN J. LAKE
DRAWN J. LAKE

ELECTRICAL

GROUNDING PLAN

PROJECT NUMBER 202-18-01

DATE: FEBRUARY 2020

DRAWING NO.
E-04

SHEET 43 OF 58

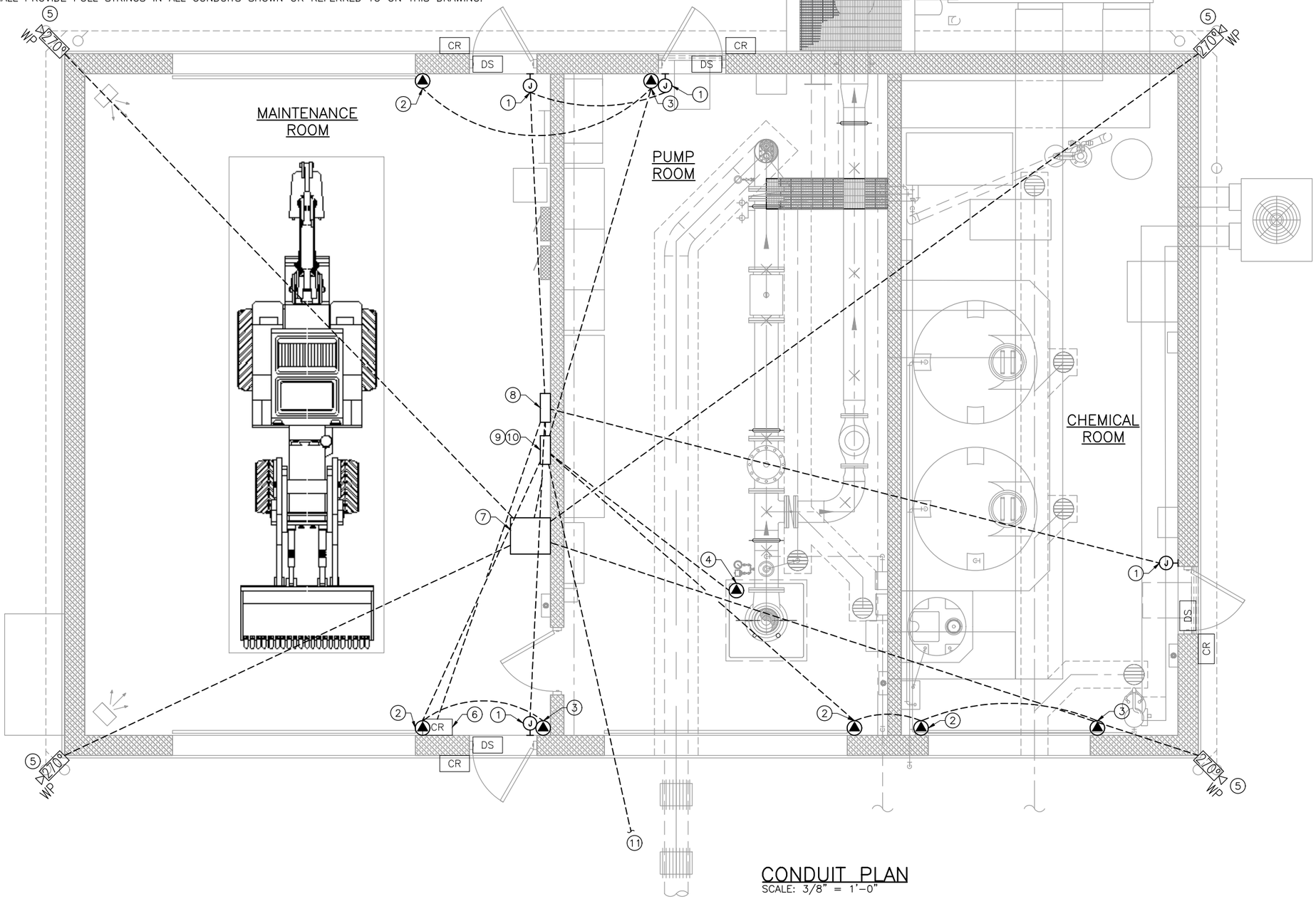
P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_E-04.dwg Plotted: 3/3/2020 4:39 PM By: Eric Neil

GENERAL NOTES:

1. WHERE ELECTRICAL CONDUITS PENETRATE SLAB, PROVIDE CURB 4"X4"XREQ'D (4" LONGER EACH SIDE OF LAST CONDUIT) (TYP)
2. CONTRACTOR SHALL SUBMIT A CONDUIT LAYOUT PLAN TO OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
3. CONTRACTOR IS RESPONSIBLE TO REFER TO DETAILS E-5109 AND E-5110 TO ENSURE THAT SECURITY SYSTEM REQUIREMENTS FROM DENCO AND DSI ARE MET.
4. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND FLOORS. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE EMBEDDED IN FLOOR AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK.
5. THE CONTRACTOR SHALL PROVIDE PULL STRINGS IN ALL CONDUITS SHOWN OR REFERRED TO ON THIS DRAWING.

KEY NOTES:

1. JUNCTION BOX FOR CONDUITS TO CARD READER, ELECTRIC STRIKE, AND DOOR POSITION SWITCH. CONTRACTOR SHALL PROVIDE AND INSTALL ITEMS AND FOLLOW INSTALL INSTRUCTIONS SPECIFIED ON DOOR DETAIL ON DETAIL E-5109. SEE NOTE #3 AND KEY NOTE #1 ON DETAIL E-5109 AND NOTES #1 AND 3 AND KEY NOTE #1 ON DETAIL E-5110.
2. CONNECTION TO OVERHEAD DOOR CONTACT. SEE DETAIL E-5110, NOTE #2 AND KEY NOTE #2.
3. CONNECTION TO MOTION DETECTOR. SEE DETAIL E-5110, NOTE #2 AND KEY NOTE #3.
4. CONNECTION TO ROOF HATCH CONTACT. SEE DETAIL E-5110, NOTE #2 AND KEY NOTE #8.
5. CONNECTION TO SECURITY CAMERA. SEE DETAIL E-5109, KEY NOTE #2.
6. CARD READER FOR ALARM. SEE DETAIL E-5109, KEY NOTE #3.
7. NETWORK CABINET, PROVIDED AND INSTALLED BY OWNER. SEE DETAIL E-5109, NOTE #5 AND KEY NOTE #4. OWNER TO INSTALL CONDUCTORS AND SET/PROGRAM PANEL.
8. DOOR ACCESS PANEL CABINET. SEE DETAIL E-5109, NOTE #1, #2, AND #4 AND KEY NOTE #5 AND DETAIL E-5110, NOTE #7.
9. BURGLAR ALARM PANEL. SEE DETAIL E-5109, NOTES #1 AND #2 AND E-5110, NOTES #4, #6, #7, AND #8 AND KEY NOTE #4, #6, AND #7.
10. RADIO ALARM TRANSMITTER. SEE DETAIL E-5110, NOTES #5 AND #6 AND KEY NOTES #4 AND #6.
11. CONNECTION TO GATE CONTACT. SEE DETAIL E-5110, KEY NOTE #5.



CONDUIT PLAN
SCALE: 3/8" = 1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
DOUGLAS MAX STEWART
LICENSED
No. 175312
STATE OF UTAH
2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED D. YOUNGSTROM
APPROVED D. STEWART

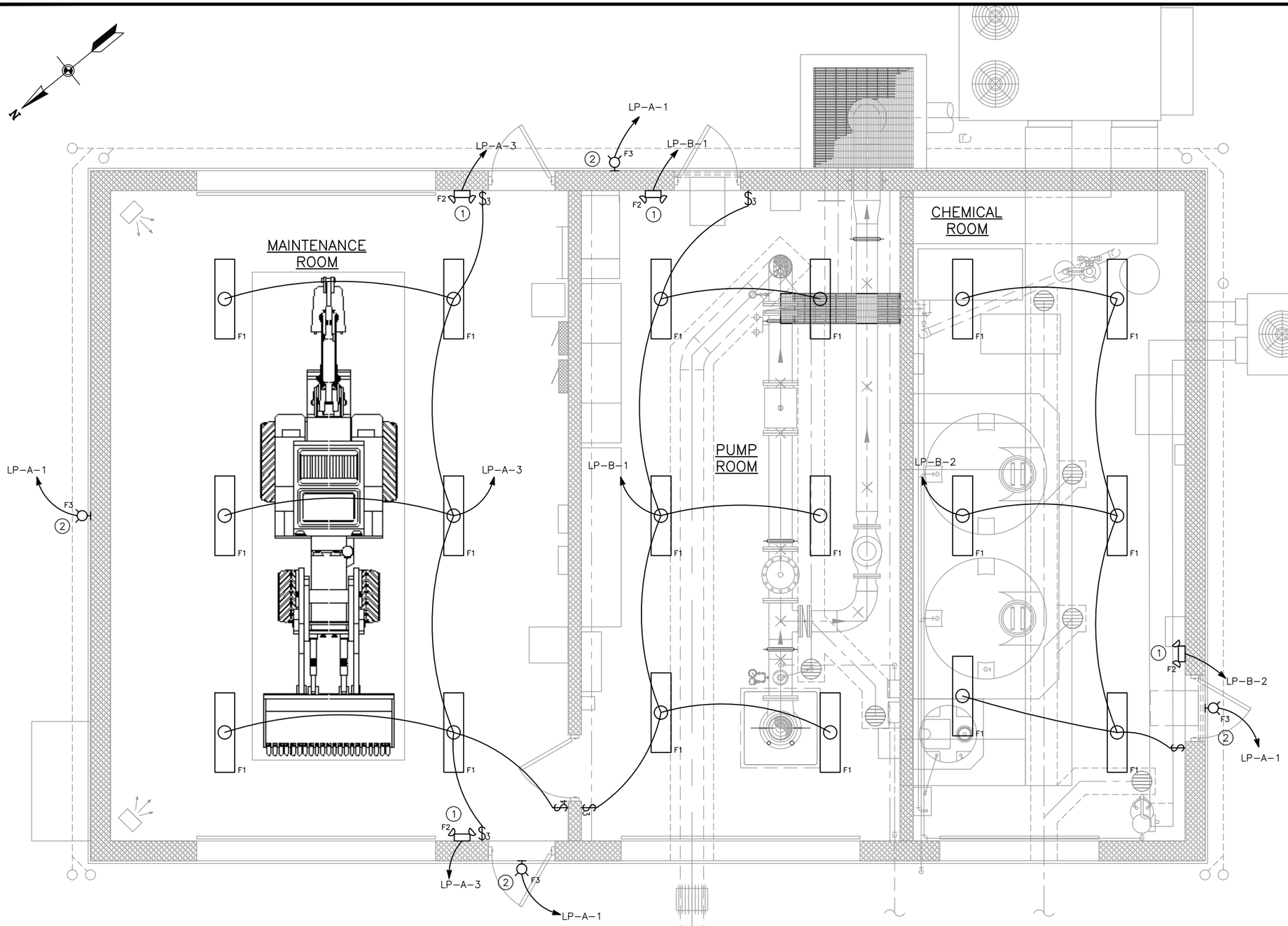
DESIGN
DESIGN J. LAKE
DRAWN J. LAKE

ELECTRICAL
CONDUIT PLAN

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

DRAWING NO.
E-05
SHEET 44 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_E-05.dwg Plotted: 3/3/2020 4:38 PM By: Eric Neil



GENERAL NOTES:

1. REFER TO FIXTURE SCHEDULE ON DRAWING E-01 FOR LIGHT FIXTURE INFORMATION.
2. CONTRACTOR SHALL SUBMIT A CONDUIT LAYOUT PLAN TO OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
3. WHERE ELECTRICAL CONDUITS PENETRATE SLAB, PROVIDE CURB 4"X4"XREQ'D (4" LONGER EACH SIDE OF LAST CONDUIT) (TYP)
4. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND FLOORS. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE EMBEDDED IN FLOOR AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK.

SHEET NOTES: (#)

1. MOUNT EMERGENCY LIGHTS APPROXIMATELY 7' ABOVE FINISHED FLOOR.
2. MOUNT WALL PACK LIGHTS APPROXIMATELY 9' ABOVE FINISHED GRADE. SEE ARCHITECTURAL DRAWINGS.

LIGHTING PLAN
SCALE: 3/8" = 1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — DOUGLAS MAX STEWART — LICENSED — No. 175312 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

DESIGN — DESIGN J. LAKE — DRAWN J. LAKE
REVIEW — CHECKED D. YOUNGSTROM — APPROVED D. STEWART

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

ELECTRICAL

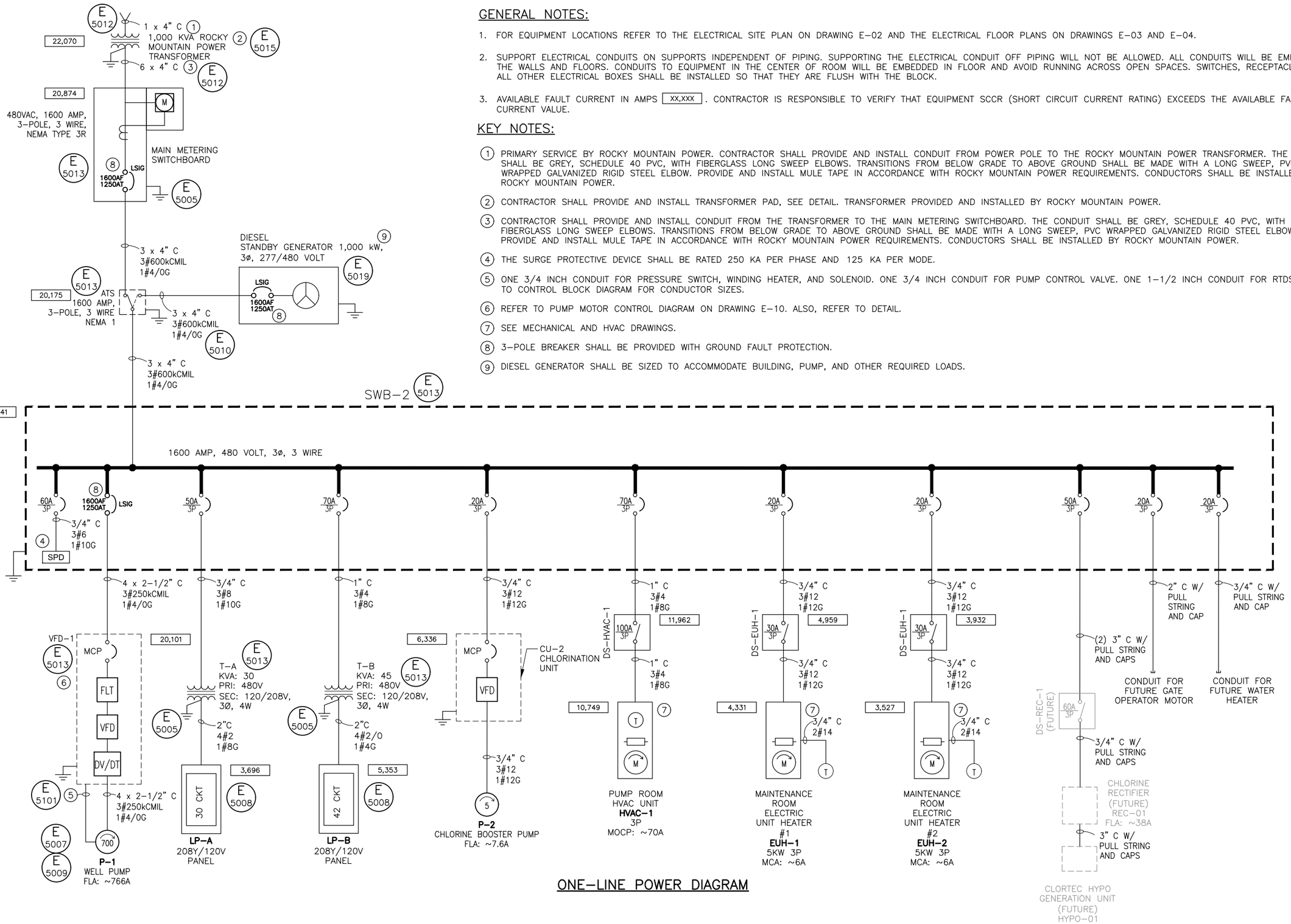
LIGHTING PLAN

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
E-06

SHEET 45 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\20218O1_E-06.dwg Plotted: 3/3/2020 4:39 PM By: Eric Neil



ONE-LINE POWER DIAGRAM

GENERAL NOTES:

1. FOR EQUIPMENT LOCATIONS REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E-02 AND THE ELECTRICAL FLOOR PLANS ON DRAWINGS E-03 AND E-04.
2. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND FLOORS. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE EMBEDDED IN FLOOR AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK.
3. AVAILABLE FAULT CURRENT IN AMPS [XX,XXX]. CONTRACTOR IS RESPONSIBLE TO VERIFY THAT EQUIPMENT SCCR (SHORT CIRCUIT CURRENT RATING) EXCEEDS THE AVAILABLE FAULT CURRENT VALUE.

KEY NOTES:

(1) PRIMARY SERVICE BY ROCKY MOUNTAIN POWER. CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT FROM POWER POLE TO THE ROCKY MOUNTAIN POWER TRANSFORMER. THE CONDUIT SHALL BE GREY, SCHEDULE 40 PVC, WITH FIBERGLASS LONG SWEEP ELBOWS. TRANSITIONS FROM BELOW GRADE TO ABOVE GROUND SHALL BE MADE WITH A LONG SWEEP, PVC WRAPPED GALVANIZED RIGID STEEL ELBOW. PROVIDE AND INSTALL MULE TAPE IN ACCORDANCE WITH ROCKY MOUNTAIN POWER REQUIREMENTS. CONDUCTORS SHALL BE INSTALLED BY ROCKY MOUNTAIN POWER.

(2) CONTRACTOR SHALL PROVIDE AND INSTALL TRANSFORMER PAD, SEE DETAIL. TRANSFORMER PROVIDED AND INSTALLED BY ROCKY MOUNTAIN POWER.

(3) CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT FROM THE TRANSFORMER TO THE MAIN METERING SWITCHBOARD. THE CONDUIT SHALL BE GREY, SCHEDULE 40 PVC, WITH FIBERGLASS LONG SWEEP ELBOWS. TRANSITIONS FROM BELOW GRADE TO ABOVE GROUND SHALL BE MADE WITH A LONG SWEEP, PVC WRAPPED GALVANIZED RIGID STEEL ELBOW. PROVIDE AND INSTALL MULE TAPE IN ACCORDANCE WITH ROCKY MOUNTAIN POWER REQUIREMENTS. CONDUCTORS SHALL BE INSTALLED BY ROCKY MOUNTAIN POWER.

(4) THE SURGE PROTECTIVE DEVICE SHALL BE RATED 250 KA PER PHASE AND 125 KA PER MODE.

(5) ONE 3/4 INCH CONDUIT FOR PRESSURE SWITCH, WINDING HEATER, AND SOLENOID. ONE 3/4 INCH CONDUIT FOR PUMP CONTROL VALVE. ONE 1-1/2 INCH CONDUIT FOR RTDS. REFER TO CONTROL BLOCK DIAGRAM FOR CONDUCTOR SIZES.

(6) REFER TO PUMP MOTOR CONTROL DIAGRAM ON DRAWING E-10. ALSO, REFER TO DETAIL.

(7) SEE MECHANICAL AND HVAC DRAWINGS.

(8) 3-POLE BREAKER SHALL BE PROVIDED WITH GROUND FAULT PROTECTION.

(9) DIESEL GENERATOR SHALL BE SIZED TO ACCOMMODATE BUILDING, PUMP, AND OTHER REQUIRED LOADS.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER DOUGLAS MAX STEWART LICENSED STATE OF UTAH NO. 175312 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

DESIGN
DESIGN J. LAKE
DRAWN J. LAKE

REVIEW
CHECKED D. YOUNGSTROM
APPROVED D. STEWART

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

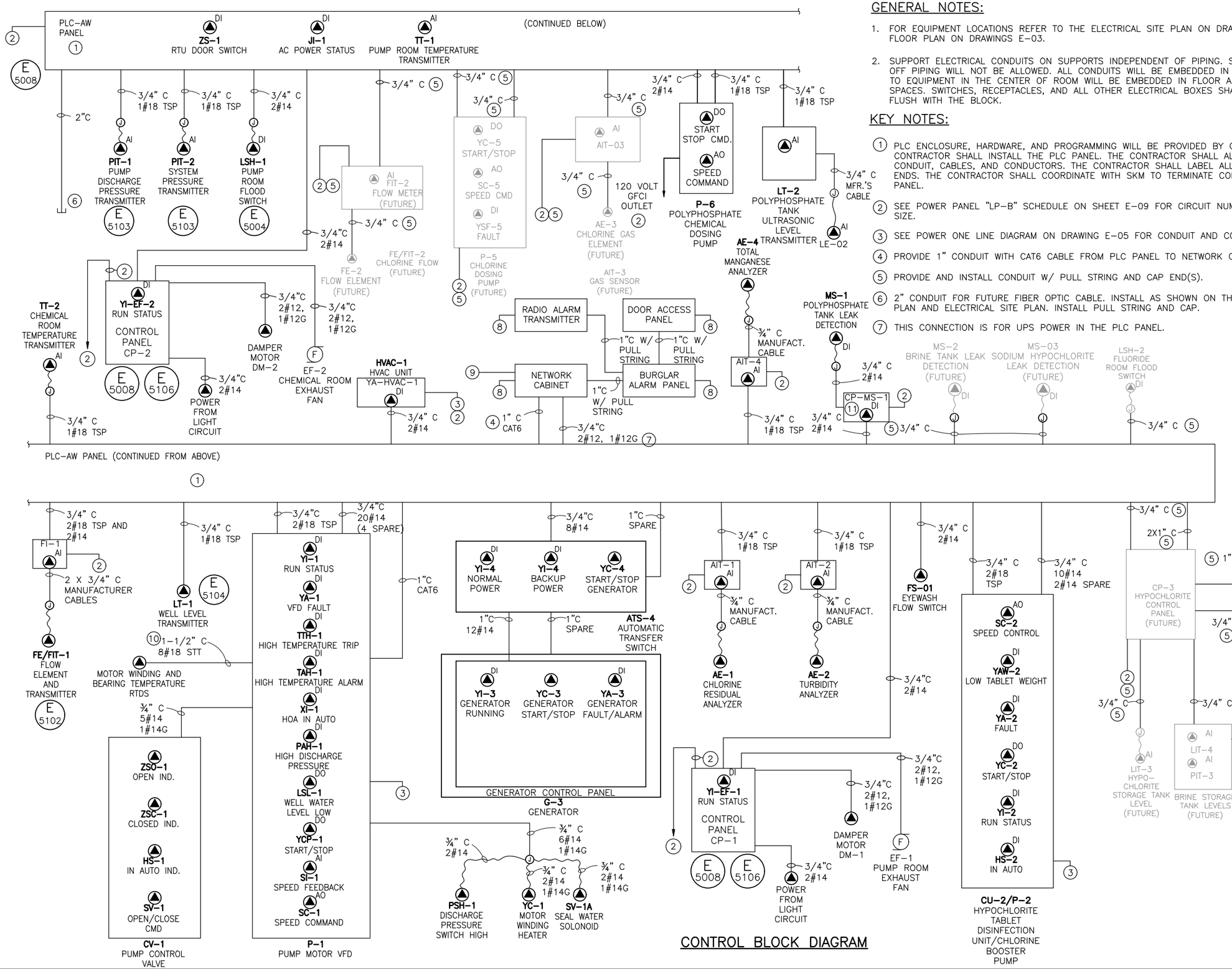
ELECTRICAL

POWER ONE-LINE DIAGRAM

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
E-07
SHEET 46 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_E-07.dwg Plotted: 3/4/2020 7:49 AM By: Eric Neil



CONTROL BLOCK DIAGRAM

GENERAL NOTES:

1. FOR EQUIPMENT LOCATIONS REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E-02 AND THE ELECTRICAL FLOOR PLAN ON DRAWINGS E-03.
2. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND FLOORS. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE EMBEDDED IN FLOOR AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK.

KEY NOTES:

1. PLC ENCLOSURE, HARDWARE, AND PROGRAMMING WILL BE PROVIDED BY CITY'S SCADA PROVIDER (SKM). THE CONTRACTOR SHALL INSTALL THE PLC PANEL. THE CONTRACTOR SHALL ALSO PROVIDE AND INSTALL ALL CONDUIT, CABLES, AND CONDUCTORS. THE CONTRACTOR SHALL LABEL ALL CABLES AND CONDUCTORS AT BOTH ENDS. THE CONTRACTOR SHALL COORDINATE WITH SKM TO TERMINATE CONDUCTORS AND CABLES IN THE RTU PANEL.
2. SEE POWER PANEL "LP-B" SCHEDULE ON SHEET E-09 FOR CIRCUIT NUMBER AND CONDUIT CONDUCTOR SIZE.
3. SEE POWER ONE LINE DIAGRAM ON DRAWING E-05 FOR CONDUIT AND CONDUCTOR SIZE.
4. PROVIDE 1" CONDUIT WITH CAT6 CABLE FROM PLC PANEL TO NETWORK CABINET PROVIDED BY THE CITY.
5. PROVIDE AND INSTALL CONDUIT W/ PULL STRING AND CAP END(S).
6. 2" CONDUIT FOR FUTURE FIBER OPTIC CABLE. INSTALL AS SHOWN ON THE POWER AND INSTRUMENTATION PLAN AND ELECTRICAL SITE PLAN. INSTALL PULL STRING AND CAP.
7. THIS CONNECTION IS FOR UPS POWER IN THE PLC PANEL.
8. SEE POWER PANEL "LP-A" SCHEDULE ON SHEET E-09 FOR CIRCUIT NUMBER AND CONDUIT CONDUCTOR SIZE.
9. P2P AND CAT6 CABLE, PROVIDED AND INSTALLED BY OWNER. PROVIDE AND INSTALL 1" CONDUIT WITH PULL STRING FROM NETWORK CABINET TO LOCATION SHOWN ON ROOF. SEE DETAIL E-5017 FOR ADDITIONAL INSTRUCTIONS.
10. 8#18 SHIELDED TWISTED TRIADS FOR WINDING AND BEARING RTDS.
11. POLYPHOSPHATE LEAK DETECTOR ALARM PANEL, SEE DETAIL M-3015.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — DOUGLAS MAX STEWART — No. 175312 — STATE OF UTAH — LICENSED — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

REVIEW — CHECKED D. YOUNGSTROM — APPROVED D. STEWART

DESIGN — DESIGN D. STEWART — DRAWN D. STEWART

ELECTRICAL
CONTROL BLOCK DIAGRAM

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

DRAWING NO. E-08
SHEET 47 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_E-08.dwg Plotted: 3/4/2020 7:50 AM By: Eric Neil

OGDEN CITY
OGDEN AIRPORT WELL

PANEL: LP-A **VOLT:208/120** **AMP:125** **PHASE:3 WIRE:4**

LOCATION (ROOM #):	MAINTENANCE ROOM	NOTE:	---
MFG:	SEE SPECIFICATION	AIC RATING:	10 kAIC
TYPE:	NEMA TYPE 1	GROUND BUS:	YES
TYPE OF MAIN:	100 AMP	MOUNTING:	SURFACE
FEEDER:	SEE ONE-LINE	FED FROM:	SEE ONE-LINE

CIRCUIT DESCRIPTION	PL	BRK	CKT NO	A	B	C	CKT NO	BRK AMP	PL	CIRCUIT DESCRIPTION
EXTERIOR LIGHTS	1	20	1	116 0			2	20	1	SPARE
MAINTENANCE ROOM LIGHTS	1	20	3		302 720		4	20	1	EXTERIOR RECEPTACLES
MAINTENANCE ROOM RECEPTACLES	1	20	5			360 300	6	20	1	GENERATOR BATTERY CHARGER
GENERATOR COOLANT HEATER	2	50	7	2500 300			8	20	1	GENERATOR BATTERY BLANKET
"	*	**	9		2500 180		10	20	1	DOOR ACCESS PANEL RECEPTACLE
BURGLAR ALARM PANEL RECEPTACLE	1	20	11			180 180	12	20	1	RADIO ALARM TRANSMITTER RECEPTACLE
NETWORK CABINET RECEPTACLE	1	20	13	360 0			14	20	1	SPARE
SPARE	1	20	15		180 0		16	20	1	SPARE
SPARE	1	20	17			0 0	18	20	1	SPARE
SPARE	1	20	19	0 0			20	20	1	SPARE
SPARE	1	20	21		0 0		22	20	1	SPARE
SPARE	1	20	23			0 0	24	20	1	SPARE
SPARE	1	20	25	0 0			26	20	1	SPARE
SPARE	1	20	27		0 0		28	20	1	SPARE
SPARE	1	20	29			0 0	30	20	1	SPARE
PHASE TOTALS				3276	3882	1020				
TOTAL WATTS				8178						
TOTAL AMPS				23						2/28/20

PANEL SCHEDULE LP-A

OGDEN CITY
OGDEN AIRPORT WELL

PANEL: LP-B **VOLT:208/120** **AMP:225** **PHASE:3 WIRE:4**

LOCATION (ROOM #):	MAINTENANCE ROOM	NOTE:	---
MFG:	SEE SPECIFICATION	AIC RATING:	10 kAIC
TYPE:	NEMA TYPE 1	GROUND BUS:	YES
TYPE OF MAIN:	150 AMP	MOUNTING:	SURFACE
FEEDER:	SEE ONE-LINE	FED FROM:	SEE ONE-LINE

CIRCUIT DESCRIPTION	PL	BRK	CKT NO	A	B	C	CKT NO	BRK AMP	PL	CIRCUIT DESCRIPTION
PUMP ROOM LIGHTS	1	20	1	298 298			2	20	1	CHEMICAL ROOM LIGHTS
PUMP ROOM RECEPTACLES	1	20	3		360 360		4	20	1	CHEMICAL ROOM RECEPTACLES
PUMP ROOM EXHAUST FAN EF-1	1	20	5			600 600	6	20	1	CHEMICAL ROOM EXHAUST FAN EF-2
FLOW METER FE/FIT-1	1	20	7	300 400			8	20	1	PLC PANEL PLC-AW
CHLORINE RESIDULE ANALYZER AE/AIT-1	1	20	9		300 300		10	20	1	TURBIDITY ANALYZER AE/AIT-2
MANGANESE MONITORING SYSTEM AE/AIT-4	1	20	11			300 400	12	20	1	BRINE TANK SALT LEVEL LE/LIT-4 (FUTURE)
CHEMICAL ROOM HVAC UNIT HVAC-2	2	60	13	5408 300			14	20	1	GAS DETECTOR AE/AIT-3 (FUTURE)
"	*	**	15		5408 300		16	20	1	FLOW METER FE/FIT-2 (FUTURE)
CHLORINE DOSING PUMP P-5 (FUTURE)	2	20	17			200 2500	18	20	2	CLORTEC HYPOCHLORITE CONTROL PANEL CP-3 (FUTURE)
"	*	**	19	200 2500			20	**	*	"
(1) HVAC-1 SERVICE RECEPTACLE	1	20	21		180 180		22	20	1	HVAC-2 SERVICE RECEPTACLE (1)
POLYPHOSPHATE METERING PUMP RECEPTACLE	1	20	23			180 200	24	20	1	POLYPHOSPHATE LEAK DETECTOR ALARM PANEL CP-MS-1
WATER SOFTNER WS-1 (FUTURE)	1	20	25	1000 300			26	20	1	TABLET CHLORINATOR CONTROL PANEL
SPARE	1	20	27		0 0		28	20	1	SPARE
SPARE	1	20	29			0 0	30	20	1	SPARE
SPARE	1	20	31	0 0			32	20	1	SPARE
SPARE	1	20	33		0 0		34	20	1	SPARE
SPARE	1	20	35			0 0	36	20	1	SPARE
BRIDGE CRANE CR-1	3	20	37	500 0			38	20	3	SPARE
"	*	**	39		500 0		40	**	*	"
"	*	**	41			500 0	42	**	*	"
PHASE TOTALS				11504	7888	5480				
TOTAL WATTS				24872						
TOTAL AMPS				69						3/4/20

PANEL SCHEDULE LP-B

NAME: SWB-2

UPDATED:	3/4/20	NOTES:	
EQUIPMENT RATING:	1600A	1.	
LOCATION:	OGDEN AIRPORT WELL - PUMP ROOM		
TOTAL AMPS:	1129.0 A		
TOTAL VOLT-AMPS:	938.57 kVA		
VOLTAGE L-L:	480 V		
VOLTAGE L-N:	277 V		

NOTE	SPACE	DESCRIPTION	A	B	C	DEMAND AMPS
	1	SPD				0.0 A
	2	P-1	265,350	265,350	265,350	957.5 A
	3	T-A	4,095	4,853	1,275	12.3 A
	4	T-B	14,380	9,860	6,850	37.4 A
	5	CP-2	2,106	2,106	2,106	7.6 A
	6	HVAC-1	17,182	17,182	17,182	62.0 A
	7	EUH-1	1,667	1,667	1,667	6.0 A
	8	EUH-2	1,667	1,667	1,667	6.0 A
	9	HYPO-1 (FUTURE)	10,531	10,531	10,531	38.0 A
	10	GATE MOTOR (FUTURE)	582	582	582	2.1 A
	11	SPARE				0.0 A

LOAD SUMMARY SWB-2

GENERAL NOTES:

1. THE MINIMUM SIZE POWER CONDUCTORS SHALL BE #12 AWG. THE MINIMUM SIZE CONDUIT SHALL BE 3/4". CONTRACTOR TO SIZE ALL OTHER CONDUIT AND CONDUCTORS TO MEET OR EXCEED CURRENT NATIONAL ELECTRICAL CODE (NEC) REQUIREMENTS.
2. FOR EQUIPMENT LOCATIONS REFER TO THE ELECTRICAL SITE PLAN, POWER AND INSTRUMENTATION PLAN, CONDUIT PLAN, AND LIGHTING PLAN.
4. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND FLOORS. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE EMBEDDED IN FLOOR AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK.
5. PROVIDE AND INSTALL CONDUITS FOR ITEMS IN PANELS THAT ARE LISTED AS FUTURE. PROVIDE AND INSTALL PULL STRINGS IN THESE CONDUITS. REFER TO POWER AND INSTRUMENTATION PLAN ON DRAWING E-03 FOR LOCATION. ALL CONDUITS MUST BE LOCATED AND SUBMITTED IN AS A CONDUIT PLAN. ALL CONDUITS MUST BE INSTALLED IN THE FLOOR, BLOCK OR ATTIC. NO VISIBLE CONDUITS WILL BE ALLOWED.

KEY NOTES:

(1) FACTORY INSTALLED 20A, 120V, DUPLEX GFCI SERVICE OUTLET. SEE DRAWING HVAC-01.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER DOUGLAS MAX STEWART No. 7353212 LICENSED STATE OF UTAH 2/27/2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

OGDEN CITY OGDEN AIRPORT WELL HOUSE PROJECT OGDEN, UT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED D. YOUNGSTROM APPROVED D. STEWART

DESIGN DESIGN J. LAKE DRAWN J. LAKE

ELECTRICAL

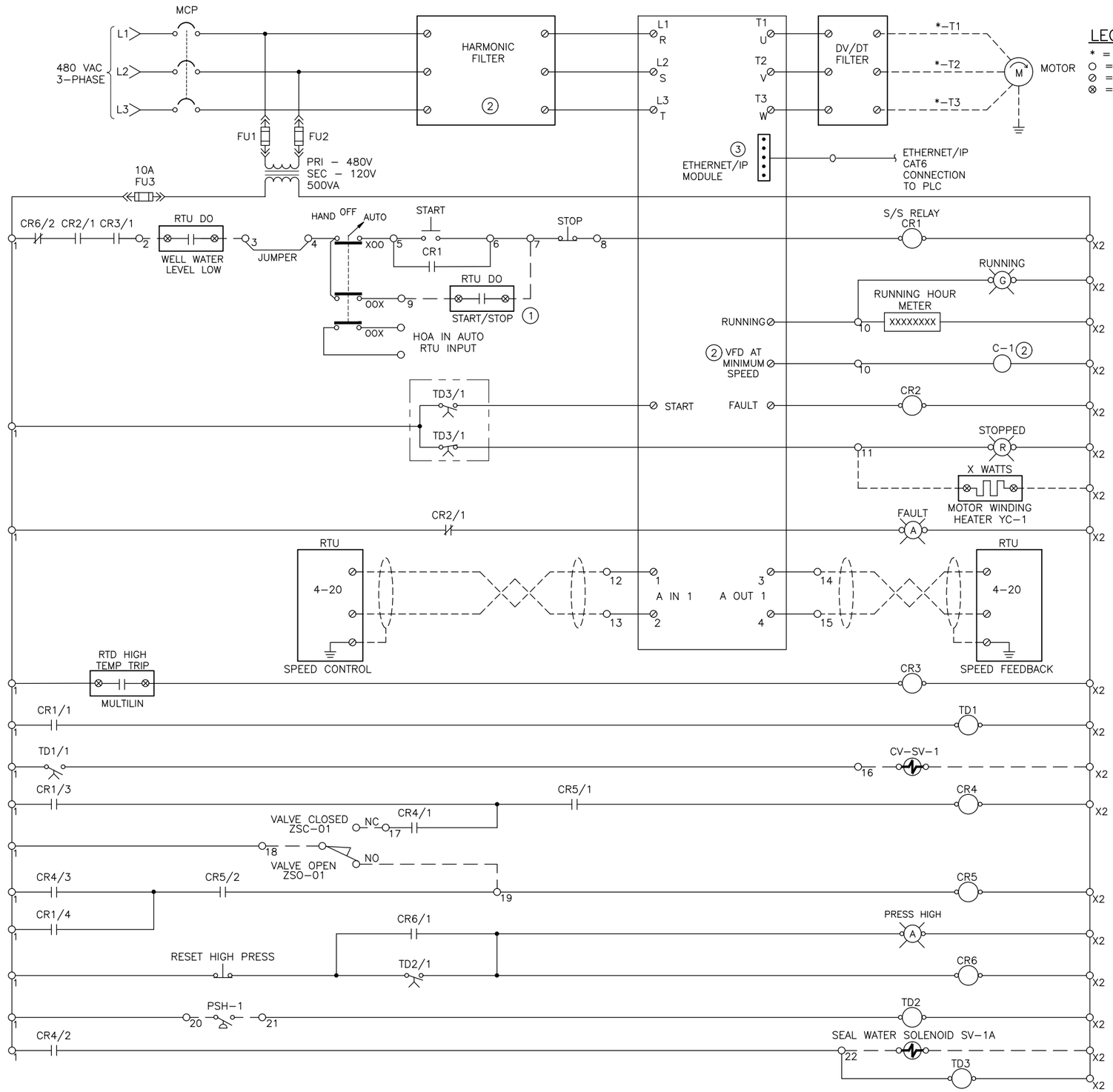
PANEL SCHEDULES LP-A AND LP-B

PROJECT NUMBER 202-18-01

DATE: FEBRUARY 2020

DRAWING NO. E-09

SHEET 48 OF 58



LEGEND:

* = MOTOR NUMBER
○ = MCC TERMINAL
⊘ = VENDOR TERMINAL
⊗ = PLC TERMINAL

GENERAL NOTES:

1. THIS IS A GENERIC WIRING DIAGRAM OF A VARIABLE FREQUENCY DRIVE. DEPENDING ON THE MANUFACTURER, THE ACTUAL WIRING DIAGRAM MAY DIFFER SLIGHTLY.
2. INSTALL COOLING FANS TO PREVENT VFD FROM OVERHEATING.
3. VFD KEYPAD SHALL BE ACCESIBLE ON FRONT DOOR OF MCC.
4. CONTROL START SEQUENCE:
   a. CONTROL VALVE IS OPEN AND PUMP IS NOT RUNNING.
   b. START COMMAND ENERGIZES CR1, PUMP CONTROL VALVE TIME DELAY RELAY (TD1), CR4, WATER SOLENOID, AND PUMP START TIME DELAY RELAY (TD3).
   c. TD3 STARTS THE VFD AND THE WELL PUMPS TO BYPASS.
   d. TD1 ENERGIZES PUMP CONTROL VALVE SOLENOID TO CLOSE VALVE AND STOP PUMPING TO BYPASS.
   e. BYPASS CLOSES AND PUMPS WATER TO SYSTEM.
5. CONTROL STOP SEQUENCE:
   a. PUMP IS RUNNING AND WATER IS PUMPING TO SYSTEM.
   b. STOP COMMAND DE-ENERGIZES CR1, TD1, AND PUMP CONTROL VALVE SOLENOID TO OPEN VALVE AND PUMP TO BYPASS.
   c. WHEN PUMP CONTROL VALVE IS OPEN; CR4 AND TD3 DE-ENERGIZE AND THE VFD STOPS.

KEY NOTES:

(1) RTU OUTPUT TO START AND STOP PUMP.

(2) THE "VFD AT MINIMUM SPEED" OUTPUT WILL ENERGIZE THE CONTACTOR WHEN THE VFD REACHES 40 HZ AND IT WILL DE-ENERGIZE THE CONTACTOR WHEN THE SPEED OF THE VFD IS DOWN TO 35 HZ. THE CONTACTOR WILL TURN ON THE CAPACITORS IN THE HARMONIC FILTER WHEN IT IS ENERGIZED AND WILL TURN OFF THE CAPACITORS IN THE HARMONIC FILTER WHEN IT IS DE-ENERGIZED. REFER TO THE SPECIFICATION FOR MORE INFORMATION.

(3) FURNISH AND INSTALL AN ETHERNET/IP COMMUNICATION MODULE TO COMMUNICATE TO AN ALLEN BRADLEY PLC. THIS SHALL BE CONNECTED WITH A CAT6 CABLE AND RJ45 CONNECTORS. SEE VFD SPECIFICATION FOR PARAMETERS TO BE AVAILABLE OVER THIS COMMUNICATION LINK.

PUMP MOTOR CONTROL DIAGRAM

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — DOUGLAS MAX STEWART — LICENSED — No. 175312 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

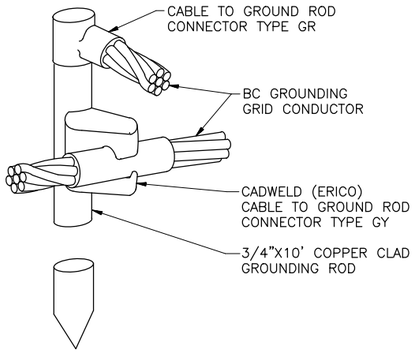
OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW: CHECKED D. YOUNGSTROM; APPROVED D. STEWART
DESIGN: DESIGN D. STEWART; DRAWN D. STEWART

ELECTRICAL
PUMP MOTOR CONTROL DIAGRAM
PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

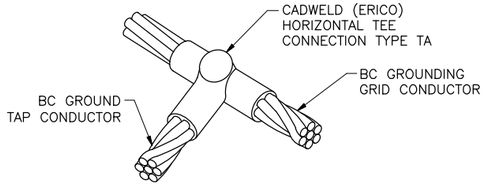
DRAWING NO. E-10
SHEET 49 OF 58



GROUND ROD CONNECTION DETAIL

SCALE: NTS

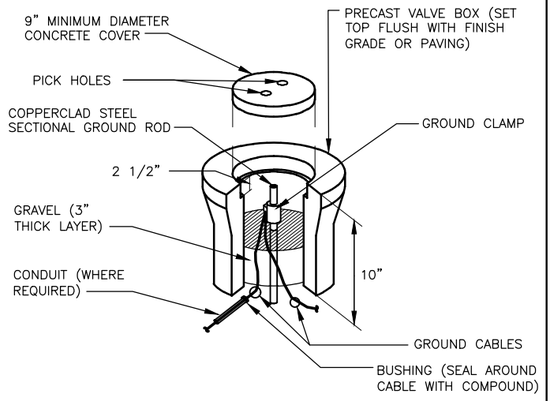
E 5001



GROUND TAP DETAIL

SCALE: NTS

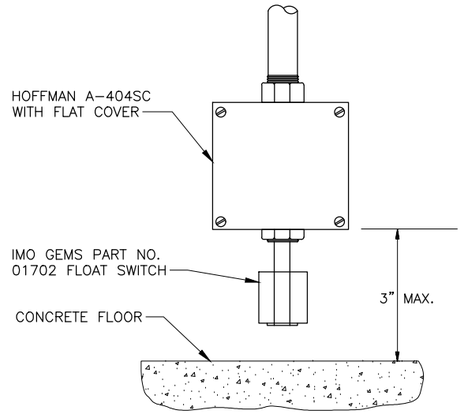
E 5002



GROUND ROD AND WELL

SCALE: NTS

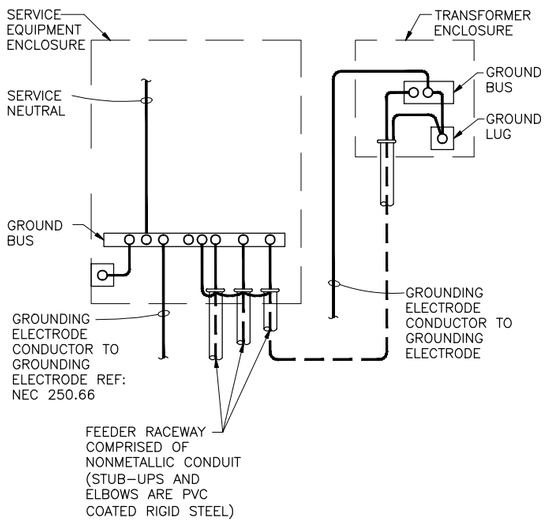
E 5003



FLOOD SWITCH INSTALLATION DETAIL

SCALE: NTS

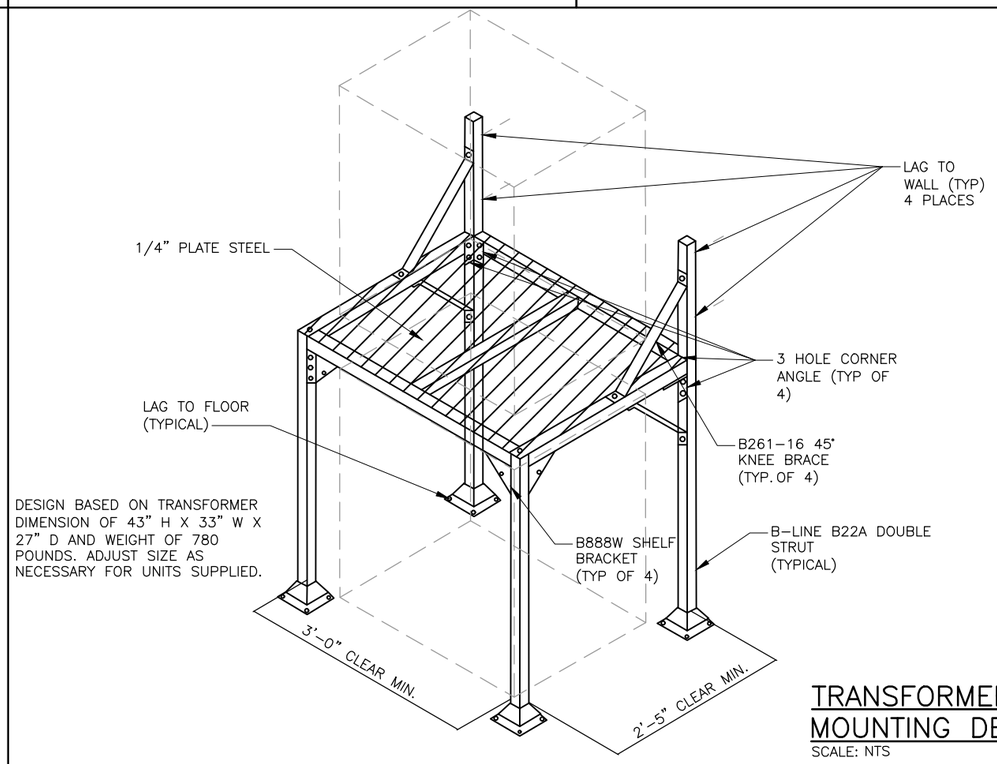
E 5004



SERVICE AND EQUIPMENT GROUNDING DETAIL

SCALE: NTS

E 5005



DESIGN BASED ON TRANSFORMER DIMENSION OF 43" H X 33" W X 27" D AND WEIGHT OF 780 POUNDS. ADJUST SIZE AS NECESSARY FOR UNITS SUPPLIED.

TRANSFORMER MOUNTING DETAIL

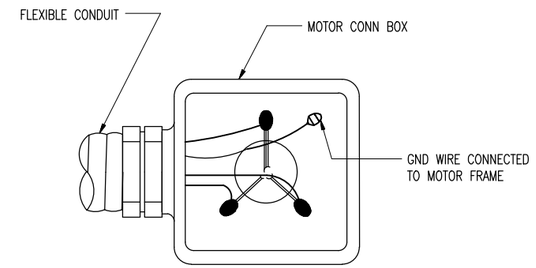
SCALE: NTS

E 5006

NOTES:

1. LUGGED AND BOLTED, INSULATED WITH 1/2 LAPPED LAYER OF VARNISHED CAMBRIC TAPE AND TWO 1/2 LAPPED LAYERS OF VINYL PLASTIC ELECTRICIANS TAPE WITH IRREGULAR SURFACES PADDED PER SPEC.

   (TYPICAL FOR NON STAR-DELTA STARTED MOTORS)



MAKEUP AT MOTOR DETAIL

SCALE: NTS

E 5007

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
DOUGLAS MAX STEWART
LICENSED
No. 175312
STATE OF UTAH
2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED D. YOUNGSTROM
APPROVED D. STEWART

DESIGN
DESIGN J. LAKE
DRAWN J. LAKE

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 1

DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

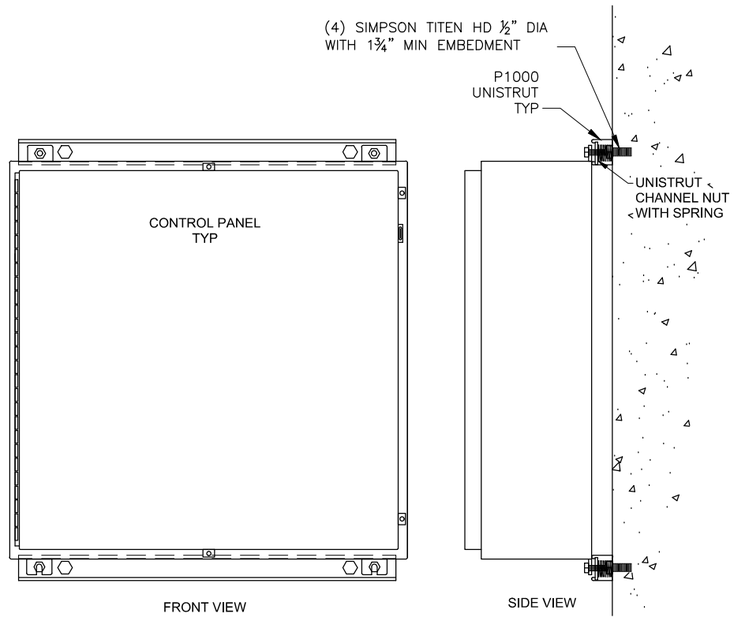
DRAWING NO.
GE-01

SHEET 50 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_GE-01.dwg Plotted: 3/3/2020 4:56 PM By: Eric Neil

GENERAL NOTES

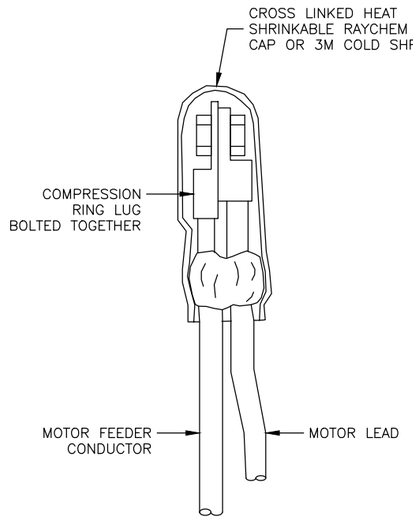
1. MOUNT PANEL OR INDICATING TRANSMITTER AT ABOUT 4' TO 5' ABOVE FINISHED FLOOR UNLESS OTHERWISE SPECIFIED IN DRAWINGS.
2. ANCHORAGE BASED ON HOLLOW CMU AND 500 LBS MAXIMUM WEIGHT OF CABINET.
3. FASTEN CABINET TO UNISTRUT WITH MIN (4) ⅜" DIA BOLTS AND CHANNEL NUTS.



TYPICAL PANEL MOUNTING DETAIL ON WALL

SCALE: NTS

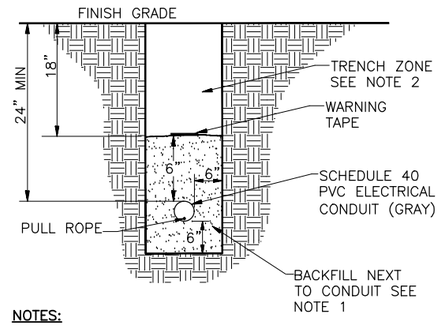
E 5008



TYPICAL MOTOR LEAD TERMINATION

SCALE: NTS

E 5009



NOTES:

1. BACKFILL MATERIAL SHALL BE TYPE C COMPACTED TO 95% PER ASTM D 1557. SEE SPECIFICATION 31 23 00.
2. NATIVE MATERIAL MEETING SPECIFICATION 31 23 00 FOR SUITABLE MATERIAL MAY BE USED FOR TRENCH ZONE BACKFILL IN UNIMPROVED AREAS, COMPACT TO 85%.
3. FOR MORE THAN ONE CONDUIT OF THE SAME VOLTAGE IN TRENCH ALLOW 6 INCHES BETWEEN CONDUITS.
4. REFER TO POWER ONE-LINE DIAGRAM FOR CONDUIT SIZES.

CONDUIT TRENCH DETAIL

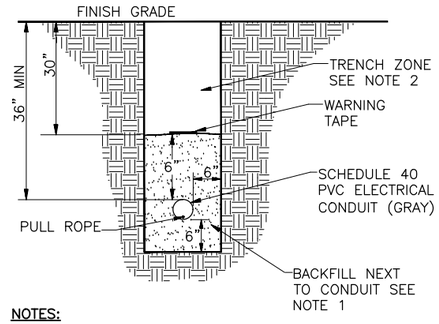
SCALE: NTS

E 5010

NOT USED

SCALE: NTS

E 5011



NOTES:

1. BACKFILL MATERIAL SHALL BE TYPE C COMPACTED TO 95% PER ASTM D 1557. SEE SPECIFICATION 31 23 00.
2. NATIVE MATERIAL MEETING SPECIFICATION 31 23 00 FOR SUITABLE MATERIAL MAY BE USED FOR TRENCH ZONE BACKFILL IN UNIMPROVED AREAS, COMPACT TO 85%.
3. FOR MORE THAN ONE CONDUIT OF THE SAME VOLTAGE IN TRENCH ALLOW 6 INCHES BETWEEN CONDUITS.
4. REFER TO POWER ONE-LINE DIAGRAM FOR CONDUIT SIZES.

ROCKY MOUNTAIN POWER CONDUIT TRENCH DETAIL

SCALE: NTS

E 5012

NOT USED

SCALE: NTS

E 5013

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — DOUGLAS MAX STEWART — LICENSED — No. 175312 — STATE OF UTAH — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED D. YOUNGSTROM — APPROVED D. STEWART

DESIGN — DESIGN J. LAKE — DRAWN J. LAKE

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 2

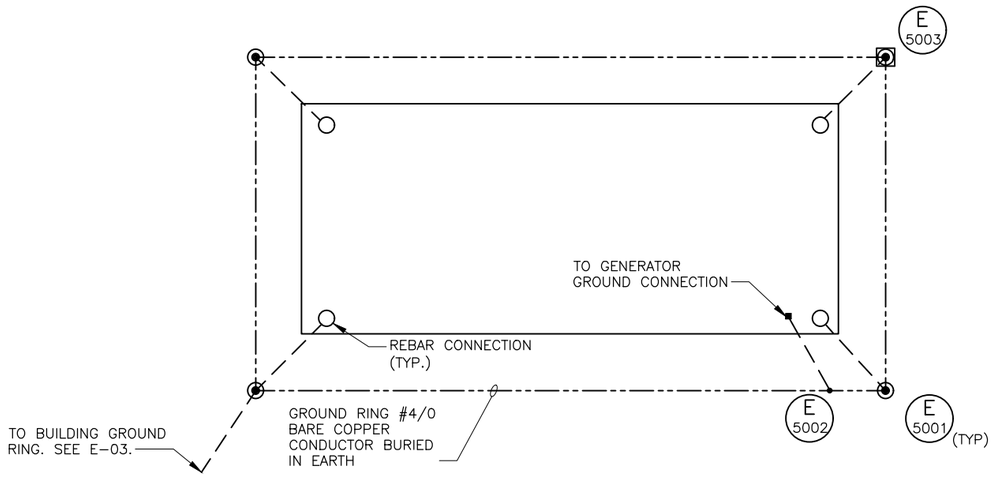
DATE: FEBRUARY 2020 — PROJECT NUMBER 202-18-01

DRAWING NO. GE-02

SHEET 51 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Shts\2021801_GE-02.dwg Plotted: 3/3/2020 4:55 PM By: Eric Neil

NOTES
1. REFER TO GENERAL NOTES ON DRAWING E–03 FOR GROUND GRID INFORMATION.



GENERATOR GROUND RING DETAIL
SCALE: NTS
E 5014

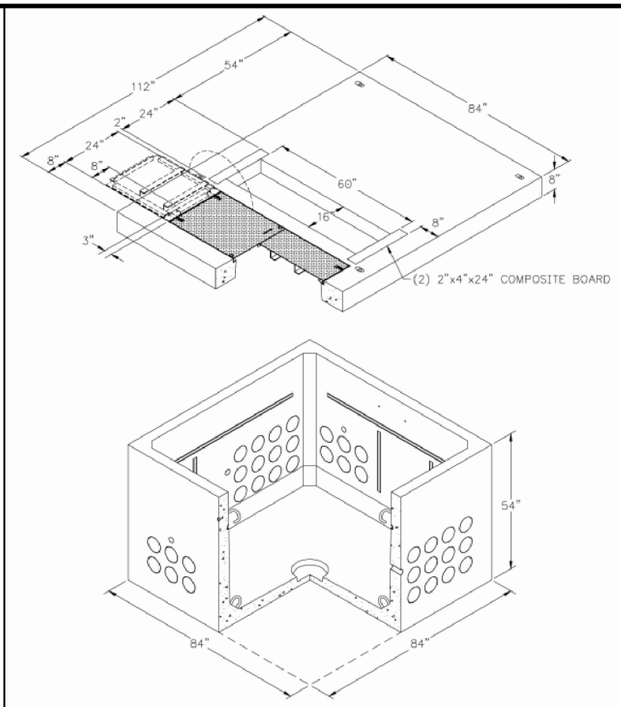
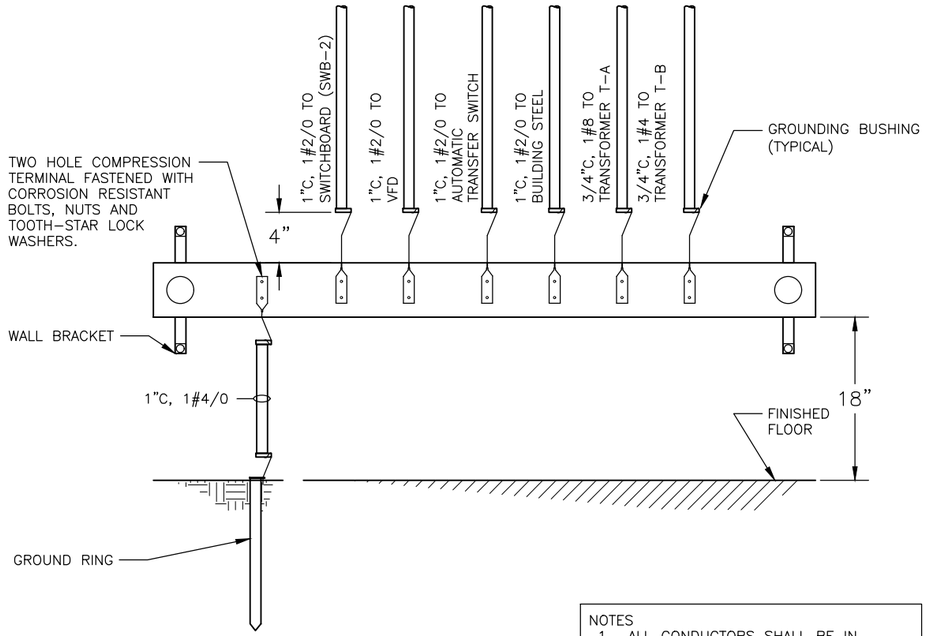


Figure 3—Padvault for 2.4–25 kV, Three-Phase, 1000–2500 kVA Transformer (SI#7992958)

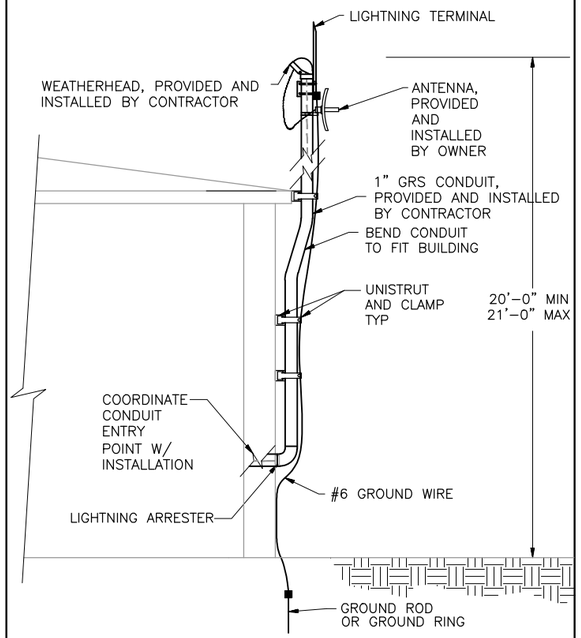
NOTE
1. REFER TO ROCKY MOUNTAIN POWER'S PUBLICATION "ZG 521 PADVAULT – THREE–PHASE TRANSFORMER," FIGURE 3.

POWER TRANSFORMER PAD DETAIL
SCALE: NTS
E 5015



NOTES
1. ALL CONDUCTORS SHALL BE IN CONDUIT, UNLESS SHOWN OTHERWISE
2. ALL CONDUITS SHALL HAVE A GROUNDING BUSHING AT EACH END.

GROUND BAR DETAIL
SCALE: NTS
E 5016



ANTENNA SUPPORT DETAIL
SCALE: NTS
E 5017

NOT USED
SCALE: NTS
E 5018

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER
DOUGLAS MAX STEWART
No. 11331202
STATE OF UTAH
2/27/2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

DESIGN
DESIGN J. LAKE
DRAWN J. LAKE

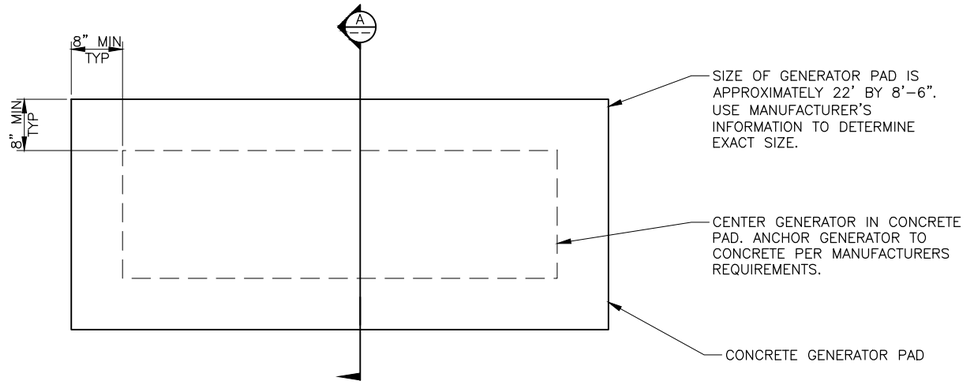
REVIEW
CHECKED D. YOUNGSTROM
APPROVED D. STEWART

ELECTRICAL
GENERAL ELECTRICAL DETAILS - 3

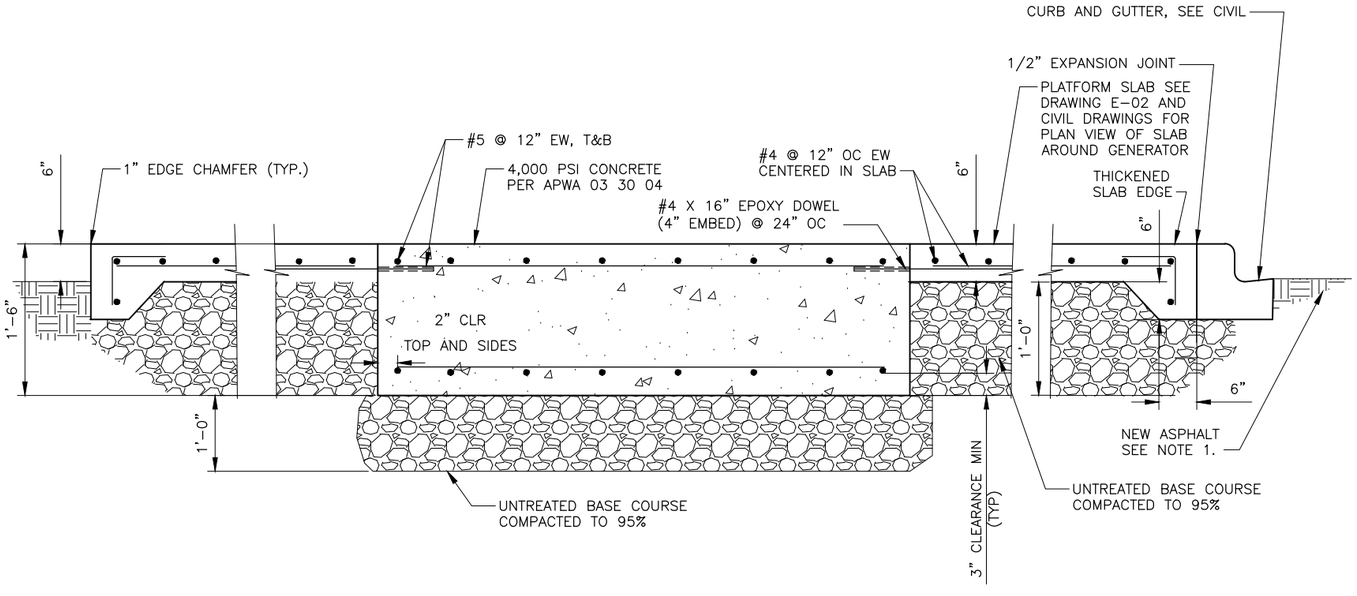
DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
GE-03
SHEET 52 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_GE-03.dwg Plotted: 3/3/2020 4:55 PM By: Eric Neil



PLAN
SCALE: NTS

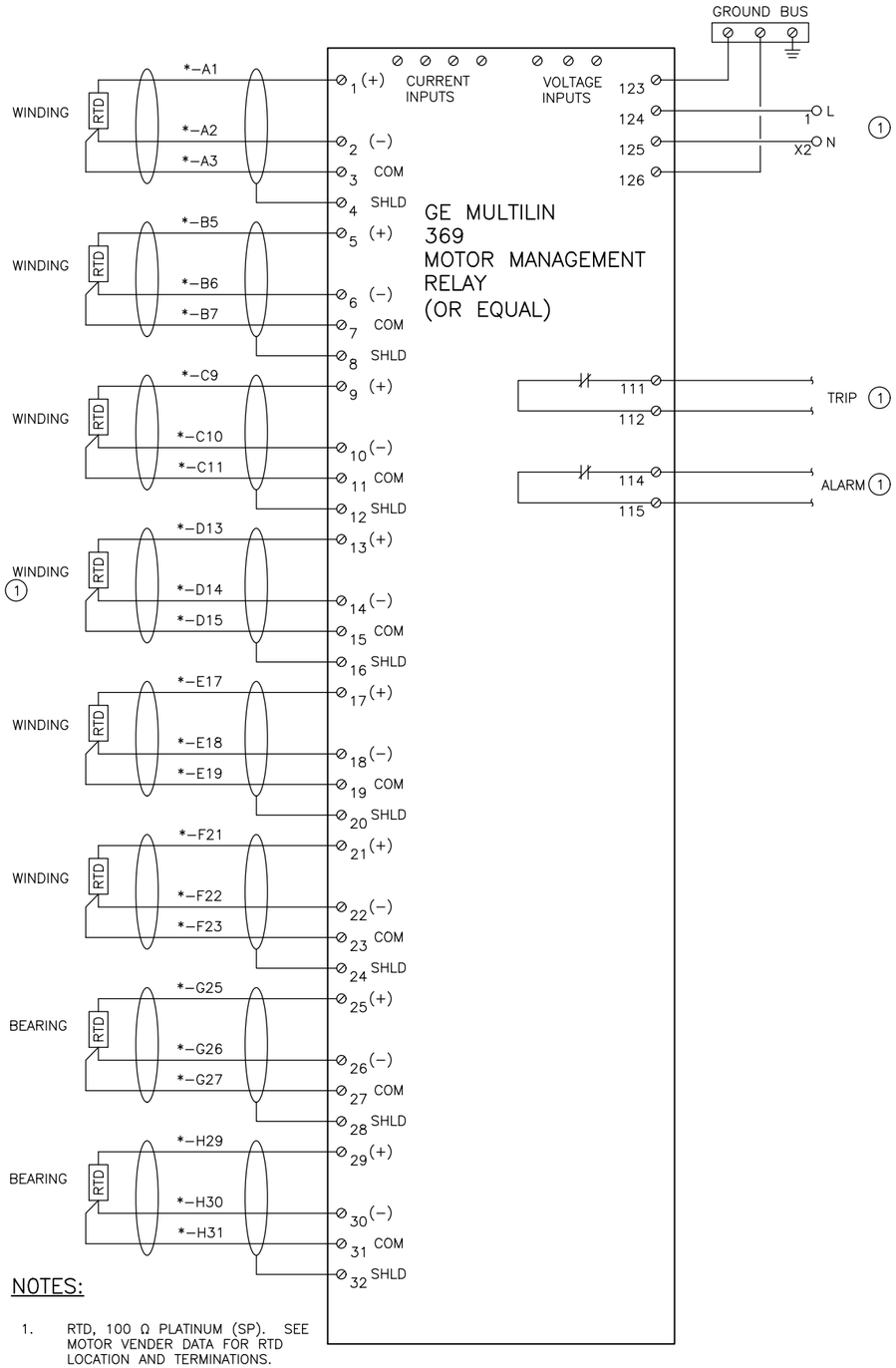


NOTES
1. FURNISH AND INSTALL NEW ASPHALT AS NECESSARY TO GRADE SITE AROUND CONCRETE PAD.

SECTION A
SCALE: NTS

EQUIPMENT PAD DETAIL
SCALE: NTS

E 5019



NOTES:

1. RTD, 100 Ω PLATINUM (SP). SEE MOTOR VENDER DATA FOR RTD LOCATION AND TERMINATIONS.
2. WIRE #18 TRIAD WITH SHIELD, MULTI CONDUCTOR WHEN PRACTICAL.

KEY NOTES:

(1) SEE RELAY SUBMITTAL FOR WIRING INFORMATION.

TYPICAL MOTOR MANAGEMENT RELAY WIRING DIAGRAM
SCALE: NTS

E 5101

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — DOUGLAS MAX STEWART — LICENSED — STATE OF UTAH — No. 175312 — 2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED D. YOUNGSTROM — APPROVED D. STEWART

DESIGN — DESIGN J. LAKE — DRAWN J. LAKE

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 4

PROJECT NUMBER 202-18-01

DATE: FEBRUARY 2020

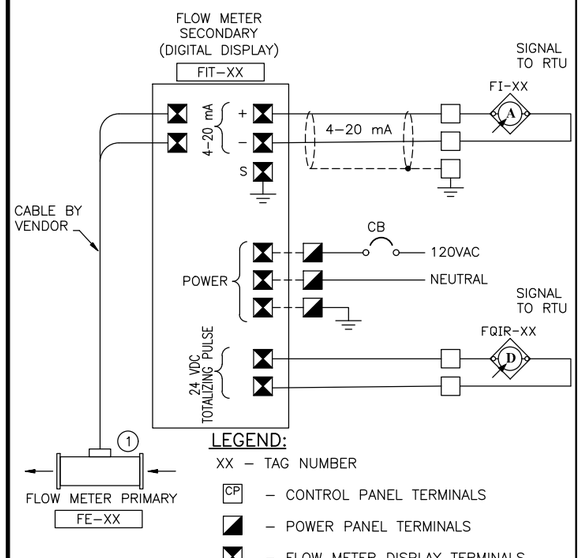
DRAWING NO. GE-04

SHEET 53 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_GE-04.dwg Plotted: 3/3/2020 4:55 PM By: Eric Neil

NOTES:

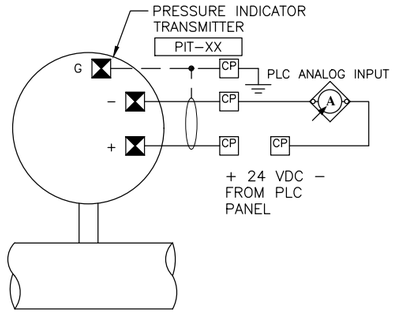
(1) GROUND FLOW METER PRIMARY AS REQUIRED BY MANUFACTURERS.



TYPICAL FLOW METER SCHEMATIC

SCALE: NTS

E 5102



LEGEND:

XX – TAG NUMBER

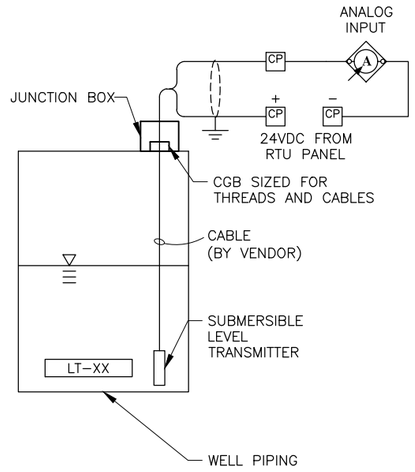
CP – CONTROL PANEL TERMINALS

– PRESSURE TRANSMITTER TERMINALS

PRESSURE TRANSMITTER SCHEMATIC

SCALE: NTS

E 5103



LEGEND:

XX – TAG NUMBER

CP – CONTROL PANEL TERMINALS

TYPICAL SUBMERSIBLE LEVEL TRANSDUCER

SCALE: NTS

E 5104

NOT USED

SCALE: NTS

E 5105

LEGEND:

CP CONTROL PANEL TERMINALS

— — EXTERNAL CONNECTION

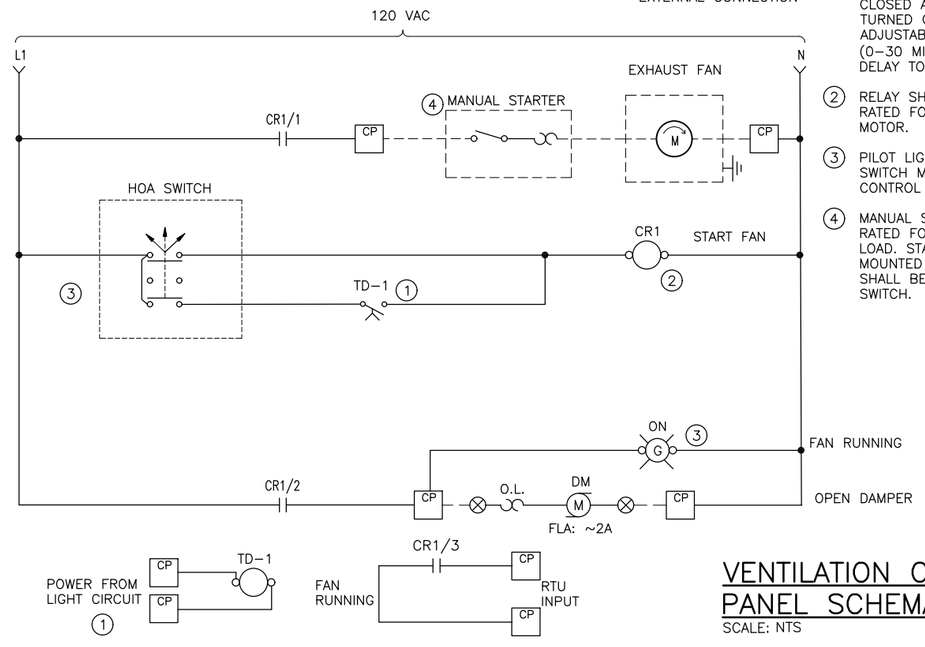
KEY NOTES:

(1) CONTACT SHALL CLOSE IMMEDIATELY WHEN LIGHTS ARE TURNED ON AND HOA SWITCH IS IN AUTO. CONTACT SHALL REMAIN CLOSED AFTER LIGHTS ARE TURNED OFF FOR AN ADJUSTABLE AMOUNT OF TIME (0–30 MIN. AT LEAST). SET TIME DELAY TO 20 MIN.

(2) RELAY SHALL BE HORSEPOWER RATED FOR SPECIFIC VENT FAN MOTOR.

(3) PILOT LIGHT AND SELECTOR SWITCH MOUNTED ON DOOR OF CONTROL PANEL.

(4) MANUAL STARTER SHALL BE RATED FOR THE EXHAUST FAN LOAD. STARTER SHALL BE MOUNTED NEAR THE FAN AND SHALL BE THE FAN DISCONNECT SWITCH.



VENTILATION CONTROL PANEL SCHEMATIC

SCALE: NTS

E 5106

NOT USED

SCALE: NTS

E 5107

NOT USED

SCALE: NTS

E 5108

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — DOUGLAS MAX STEWART — LICENSED — No. 175312 — STATE OF UTAH

2/27/2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

OGDEN CITY

OGDEN AIRPORT WELL HOUSE PROJECT

OGDEN, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED D. YOUNGSTROM — APPROVED D. STEWART

DESIGN — DESIGN J. LAKE — DRAWN J. LAKE

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 5

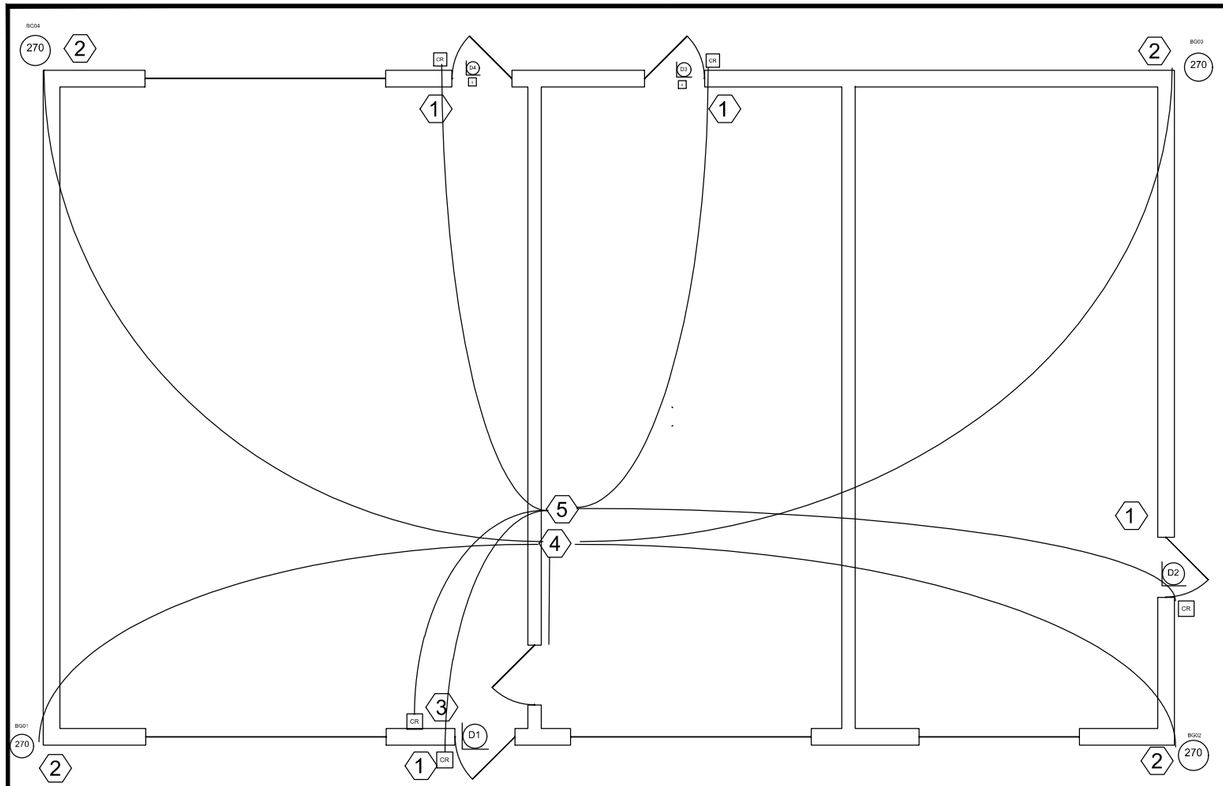
DATE: FEBRUARY 2020

PROJECT NUMBER 202-18-01

DRAWING NO. GE-05

SHEET 54 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_GE-05.dwg Plotted: 3/3/2020 4:54 PM By: Eric Neil

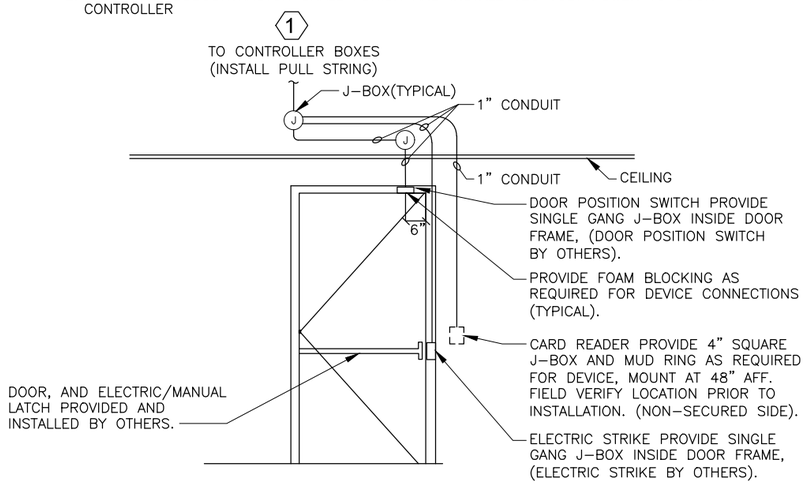


Notes

1. Provide Conduit from door access controller to security panel for integration
2. Burgler alarm panel and Door Access panel to be placed next to one another
3. Denco and DSI will share conduit and single 3/4 inch dual contact in the man door header
4. Door Access Cabinet 23" T x 17" W x 6" D
5. Ogden City to install and determine Network cabinet dimensions

NOTES:

1. ELECTRICAL SUBCONTRACTOR SHALL FURNISH AND INSTALL ALL FOAM BLOCKING, BOXES AND CONDUIT WITH PULL STRINGS BETWEEN DOOR CONTROLLER AND LATCH DEVICE ASSOCIATED WITH SECURITY AND ACCESS SYSTEMS.
2. ELECTRICAL SUBCONTRACTOR SHALL FUNISH AND INSTALL 120 VOLT POWER TO DOOR CONTROLLER



N

Scale:
1/8" = 1 Foot

Pumphouse Security Plan

Key Notes:

1. Door Access - Run 1" Conduit, with pull string, into door header above each door as detailed (left) and in submittals to Door Access panel. Install one single gange box flush with the wall for each Card Reader
2. Cameras. - Run 1" Conduit with pull string from single gang box on the exterior corner on the wall. Placement below the soffit level to network cabinet
3. CR for Alarm - Run 1" Conduit, with pull string to Door Access panel
4. Network Cabinet. Install double gang, 120v four outlets inside cabinet
5. Door Access Panel Cabinet. Install single gang 120v power outlet next to cabinet

SYMBOL KEY	
270	270 Degree Camera
D1	Door Strike
CR	Card Reader Location

PUMP HOUSE
SECURITY PLAN (DSI)
SCALE: NTS

E
5109

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
DOUGLAS MAX STEWART
LICENSED
No. 175312
STATE OF UTAH
2/27/2020

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN CITY
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED D. YOUNGSTROM
APPROVED D. STEWART

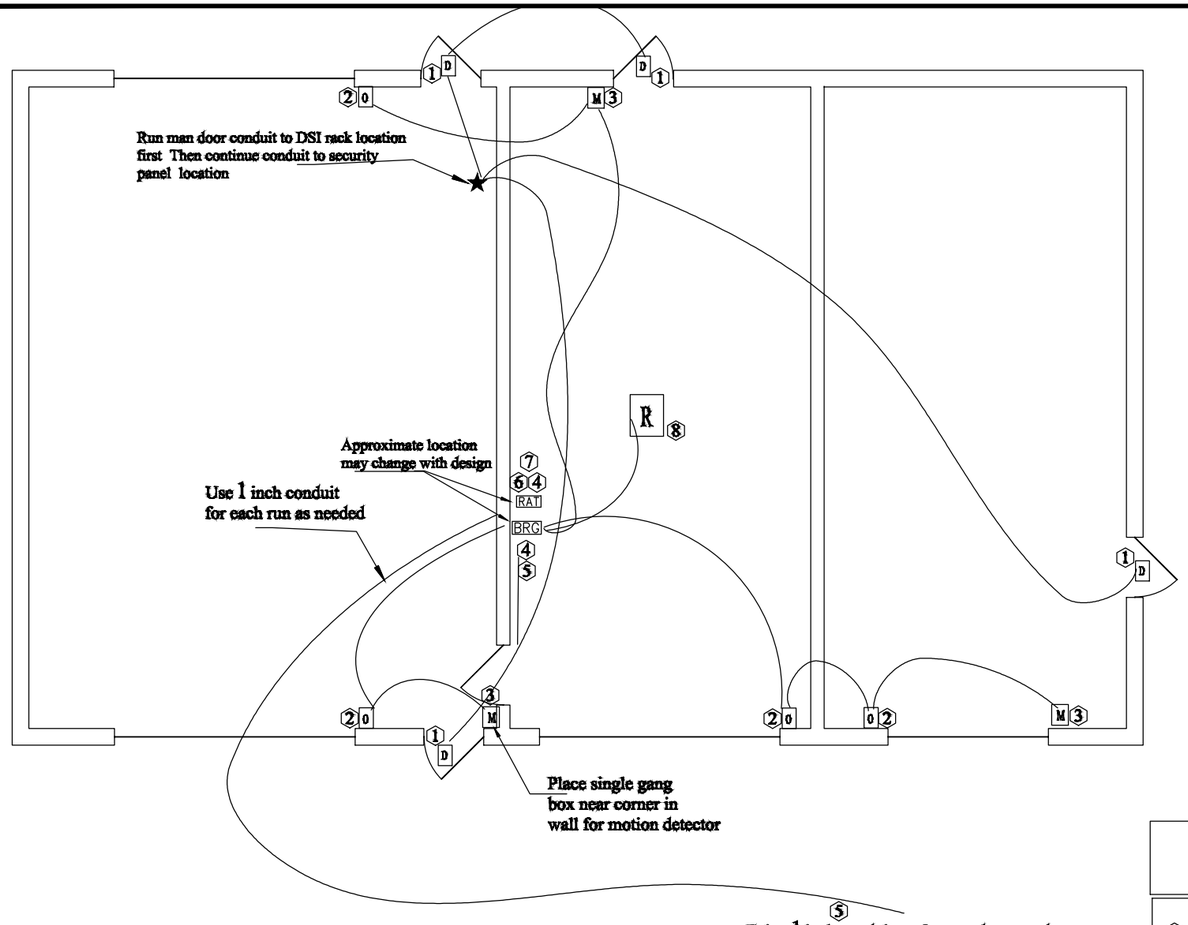
DESIGN
DESIGN J. LAKE
DRAWN J. LAKE

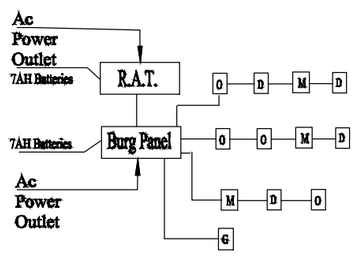
ELECTRICAL

GENERAL ELECTRICAL DETAILS - 6

PROJECT NUMBER 202-18-01
DATE: FEBRUARY 2020

DRAWING NO.
GE-06
SHEET 55 OF 58





Main Level

One Line Diagram

N

Scale:
1/8" = 1 Foot

Pumphouse Security Plan

Notes:

1. Denco and DSI will share conduit, and single 3/4 inch dual contact in each man door header.
2. All security device sensors other than man door sensors will require a single gang box recessed in wall unless noted
3. Man door conduits to be placed in headers as per DSI's detail
4. Burglar alarm panel dimensions are 12w X 14h
5. RAT transmitter dimensions are 9w X 13h, mount as close to ceiling as possible leaving room above for 11 inch rubber whip antenna
6. Burglar alarm panel and RAT panel each require a seperate single gang outlet for power
7. Provide conduit from door access controller to security panel for integration
8. Place burglar alarm panel at 5'6" above finished floor to allow for front panel keypad operation.
9.

Key Notes:

1. Run conduit into door header above each door as detailed in the submittals from DSI.
2. Run conduit to base of rollup door, place conduit 6 inches up from finished floor and direclty to the side of door in wall.
3. Run conduit to motion detector location 7 feet above floor in wall
4. Install 2 AC outlets in wall near main control panel and RAT.
5. Run conduit from main alarm location to exterior gate
6. RAT to be mounted near ceiling above burg panel. Recess 4 square box behind RAT at a distance of 20" below finished ceiling to top of box. run interconecting conduit to 4 square box behind security panel.
7. Terminate security conduit in 4 square box behind security panel in wall. Place 4 square box 4'9" above finished floor to top of box.
8. Run conduit to single gang box within 6 inches of roof hatch on latch side.

SYMBOL KEY	
BRG	Burglar Alarm Panel
O	Overhead Door Contact
D	Door Contact
G	Gate Contact
M	Motion Det.
R	Roof Hatch Contact
RAT	Radio Alarm Transmitter

PUMP HOUSE
SECURITY PLAN (DENCO)
SCALE: NTS

E
5110

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
DOUGLAS MAX STEWART
No. 175312
LICENSED
STATE OF UTAH
2/27/2020

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

OGDEN CITY
OGDEN AIRPORT WELL HOUSE PROJECT
OGDEN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN J. LAKE
DRAWN J. LAKE
REVIEW
CHECKED D. YOUNGSTROM
APPROVED D. STEWART

ELECTRICAL
GENERAL ELECTRICAL DETAILS - 7
DATE: FEBRUARY 2020
PROJECT NUMBER 202-18-01

DRAWING NO.
GE-07
SHEET 56 OF 58

P:\Ogden City\202-18-01 Ogden Airport Well\Design Phase\Drawings\Sht\2021801_GE-07.dwg Plotted: 3/3/2020 4:56 PM By: Eric Neil